

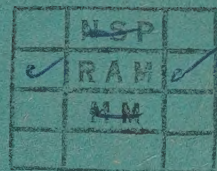
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MAURITIUS

Annual Report
OF THE
Department of Agriculture
for the year 1967

No 2 of 1971



PRINTED AND PUBLISHED BY
L. CARL ACHILLE, GOVERNMENT PRINTER,
PORT LOUIS, MAURITIUS
JANUARY 1971





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Ministry of Agriculture and Natural Resources,
(Agricultural Services),
Réduit,
1st September, 1969.

SIR,

I have the honour to submit the Annual Report of the Department of Agriculture for the year 1967.

The delay in submission is regretted.

I have the honour to be,

Sir,

Your obedient servant,

A. MULDER,
Chief Agricultural Officer.

THE HONOURABLE THE MINISTER OF
AGRICULTURE AND NATURAL RESOURCES,

MINISTRY OF AGRICULTURE AND NATURAL RESOURCES,
PORT LOUIS.

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Annual Report of the Department of Agriculture for the Year 1967

I. General Review

During 1967, there has been no important change in policy, which continued to centre round the maximum utilisation of the land and water resources of Mauritius and its dependencies.

2. The United Nations Development Programme project, of which the main object was to carry out a land and water resources survey of Mauritius, continued to make excellent progress. The project has been extended to the middle of 1969 so that the practical application of the recommendation it is proposed to make may be tested.

3. Land suitable for agriculture, which has not already been developed, is limited. The majority of this undeveloped land is situated in the uplands and is suited to tea and pastures. In the current four-year development programme it is proposed to plant tea at the rate of 1,000 Acres annually. In general, emphasis has been on increasing the productivity of land under cultivation as well as on the utilisation of small plots of undeveloped land outside the tea areas.

4. The livestock industry continued to receive much attention. The production and marketing of milk and meat is being closely investigated with a view to establishing the industry on a sound footing. The poultry industry has benefited from substantial loans from the Development Bank and it has now expanded to the extent that we are self-sufficient in eggs and are nearing selfsufficiency in poultry meat.

5. Last year's record production of potatoes was even bettered, production being higher by almost 10 per cent, mainly as a result of the activities of the Agricultural Marketing Board. Producers were offered a guaranteed floor price to leave them with a reasonable margin of profit. However this increased production caused serious storage problems. At the peak of the harvest season, 2,000 tons of potatoes were held in stock by the Board. Refrigerated space is being increased and it is expected that in 1968 the storage problem will be less acute. Onions and garlic also received a guaranteed floor price. As a result production in Mauritius and Rodrigues were even higher than last year. Limes in Rodrigues were declared a controlled product since 1966 and the Board purchased all limes of marketable quality delivered to it from Rodrigues at a minimum price of 4 cents each. But instead of an expected crop of 70,000 limes, a bumper crop of nearly half a million was received at the Board's Stores, mainly in the three months June to August, causing tremendous storage problems.

6. Proper control over illegal fishing with undersized nets and explosives could not be exercised because of shortage of staff leading to the flying squad being disbanded and subsequent increase of fraud. Catch figures controlled throughout the year at four major fish landing stations showed a drop of 25 per cent from the average and were possibly a reflection of a general drop in catch throughout the island, which can be attributed to over-fishing of the lagoons. The advantages of gill nets compared with large seines were becoming generally accepted by fishermen in both Mauritius and Rodrigues because of the selective nature of the fishing; gill-nets of 10 cm mesh size appear to catch only mature fish and give a yield not inferior to large seines. By the end of the year 1966, suitable preliminary designs had been obtained for three fishing boats, to be constructed locally in the first two years of the 1966-70 development programme. The 26 ft boat is intended for use as a prototype fishing boat capable of fishing on the continental shelf outside the reef and manned by up to six fishermen. It has been named "Solitaire" and was launched on 20th June 1967. The 36 ft boat is intended to investigate the fishing potential on the continental shelf and for trying out new methods of fishing in these waters. It has been named "Explorer" and was launched on the 8th November 1967. The 85 ft, all steel, deep sea fishery research vessel is intended for experimenting with new methods of fishing in the western Indian Ocean and on the extensive banks that lie to the north of Mauritius. By the end of the year 20 per cent of the plating had been constructed.

7. Weather conditions, in general, were fairly favourable for agriculture during the year, despite a cyclone of considerable intensity early in the year. Favourable climatic conditions during the vegetative phase of the sugar cane crop and unfavourable weather during the maturation period accounted for an increased production of approximately 1 million tons of cane but only of approximately 77,000 tons more of sugar compared to the previous year. The yield and quality of the virginian flue cured tobacco was not adversely affected by the humid conditions prevailing late in the season but the air-cured Amarello crop, which is a longer crop, was affected. The yield of the tea bushes was higher, despite damage to the flush by the tropical cyclone early in the year. In Rodrigues a favourable first half year was followed by one of the worst droughts in the period August to November; then in December Rodrigues experienced the disasters of intense tropical cyclone Carmen which caused considerable losses to crops and stock.

8. Climatic conditions during the vegetative stage of the cane crop were better than average but more unfavourable than average during the maturation stage. The production of sugar was 638,813 tons compared to 561,800 tons in 1966, an increase of nearly 70,000 tons compared to an increase of nearly a million tons of cane. The yield of sugar per arpent was 3.33 tons of sugar compared to 2.87 tons in 1966.

9. The production of tea rose by 475,980 lbs, an eleven per cent increase on the 1966 crop and amounted to 4,829,019 lbs compared to 4,353,039 lbs in the previous year. Of this production, about 18 per cent was consumed locally, the remainder being exported mainly to the United Kingdom. Exports to South Africa in 1967 amounted to 1,079,680 lb compared to

121,360 lbs in 1966 and to 2,351,479 lbs exported to United Kingdom in 1967. The average price of Mauritian tea on the London Market was 3/8.4d per lb, i.e., a slight increase of 3.22d over the previous year.

10. Weather conditions turned unfavourable at the end of the season which was reflected by a reduction in the yield and quality of the Amarello air-cured crop, although it did not very much adversely affect the Virginia flue cured tobacco. The switch-over to the cheapest brands of cigarettes resulting from a change in the Excise duty in July 1966 was further accentuated in 1967. There has been a drastic reduction, of the order of 60 per cent, in the acreage under Virginia varieties from 1,004 Arpents in 1966 to 413 Arpents in 1967 and a sizeable increase of the order of 72 per cent in the acreage under Amarello from 200 Arpents in 1966 to 344 Arpents in 1967. The average yield of Virginia flue cured was 647 kgs per arpent, an increase of 50 per cent over 1966, and that of Amarello air cured 905 kgs. per arpent, a decrease of 15 per cent on the 1966 figure. As a consequence, the average return per arpent of the flue-cured Virginia was considerably higher than in 1966 and was slightly lower for the Amarello crop.

11. The production of fibre increased slightly to 1,602 metric tons compared to 1,552 metric tons in 1966. This fibre was used with imported jute mainly for the manufacture of sacks at the Government Sack Factory. 1,341,305 sacks were produced compared to 1,658,354 sacks in 1966.

12. There was a further reduction in the total weight of locally produced beef from slaughter houses which amounted to 860,948 lbs from animals produced in Mauritius and 160,598 lbs from Rodriguan animals imported into Mauritius, compared with 1,050,642 lbs and 230,350 lbs respectively, in 1966. 11,873 bullocks imported from Madagasikara, were slaughtered compared with 8,793 bullocks in 1966. There was also a further reduction in the importation of frozen beef and beef products of some 420,000 lbs. The quantity of sheep and goats exported from Rodrigues to Mauritius decreased by 419 heads compared to the previous year. There has been a satisfactory increase in the local production of eggs and poultry.

13. Once again production of foodcrops and vegetables was higher than in the previous year. There were substantial increases in the production of maize, potatoes, tomatoes, ginger and banana but sweet potatoes showed a further 30 per cent reduction. The Grow More Food Campaign coupled with the setting up of a Marketing Board has certainly contributed to an intensification in the production of foodcrops. The Estimated total production of foodcrops rose by 5,314 tons from 47,622 metric tons in 1966 to 52,936 metric tons. To cope with increased local production of potato, the Marketing Board Storage capacity has been doubled and refrigerated storage space extended. Sugar estates have evinced keen interest on the production of oil crops in cane interrows.

14. The Board of Agriculture, Fisheries and Natural Resources met only once and discussed a report of the Mauritius Sugar Industry Research Institute on the latest position regarding the gumming disease of sugar cane. It is expected that by gradual replacement of the M 147/44 and other susceptible varieties the disease will be kept under control.

15. The Department was organised into 13 divisions, staffed by 362 officers, including a Director and two Deputy Directors who plan and carry out the experimental, development and extension work of the organisation. At the close of the year, there were 82 vacancies. Twenty four part-time lecturers were employed by the College of Agriculture. The Extension Expert provided by the Food and Agricultural Organisation of the United Nations to assist in the in-service training of the Extension Staff left in December 1967 at the termination of his contract. The Home Economist also left on 10th November 1967 on termination of her contract. The United Nations has approved of a Milk and Beef Project and will make available the services of various experts. A Fisheries Expert will also be assigned to Mauritius by the United Nations for assisting in the development of the fishing industry.

16. The work of the Department is broadly divided into:

- (a) Applied research and development—to study and develop crops and livestock in the various environmental conditions obtaining in Mauritius and Rodrigues;
- (b) Extension—to advise and assist farmers with a view to their obtaining the maximum productivity and economic returns from their farms.

17. The development of agricultural industries, other than sugar, and the provision of extension services to both small sugar-cane planters and others as well as livestock producers continued to be the main concern of the department.

18. The "Produce More Food Campaign" was extended to a further eight villages. Production of foodcrops in cane interlines has been considerably intensified with sugar estates and large planters participating on a bigger scale. Beans, maize, potato and tomato were the main crops grown in virgin interlines and even ratoon interlines were cultivated with potatoes, cabbage, and beans in the wetter localities. Since there are six to seven times more land under ratoon cane than under virgin cane, the cultivation of short cycle crops in ratoon interlines deserves attention.

19. The majority of the technical officers in the department received their initial training in agriculture and sugar technology at the College of Agriculture. Professional staff completed their training overseas. The College also provided technical staff for the sugar industry, other agricultural industries and the Mauritius Sugar Industry Research Institute. The College continued to offer three-year courses leading to Diplomas in agriculture and sugar technology, a one-year certificate course in tropical agriculture and part-time courses in sugar-cane cultivation and sugar analysis. A total of 83 students were admitted to the various courses of whom 67 to the three year diploma course, 13 to the one year part-time certificate in cane cultivation and 3 to other part-time courses. 12 students were awarded the Diploma in Agriculture and 5 students the Diploma in Sugar Technology, 12 the Certificate in Cane Cultivation and 3 the Certificate in Tropical Agriculture. Two

laureateships were awarded under the auspices of the " Comité de Collaboration Agricole Maurice—Réunion—Madagasikara ", six students accompanied by 2 lecturers visited Réunion and Madagasikara. In return we received a delegation from each of these two countries.

20. The Department continued to provide for the Sugar Industry essential services such as the assessment of sugar to planters and millers. This is one of the most important duties of the Cane Planters and Millers Arbitration and Control Board, which functions as a division of the Department of Agriculture and which also regulates the sale and purchase of sugarcane. On the other hand advice is given by the Extension Service of the Department to planters who cultivate less than 100 arpents of lands with sugarcane. Some 26,826 tests were carried out on planters' and miller/planters sugarcane at 22 factories. Twenty-three protests were lodged against the awards made by the Board, fifteen by Co-operative credit societies and eight by planters. However in no case was the assessment varied. Cost of production questionnaires were forwarded to fifty five planters and twenty three sugar estates with factories. A schedule of rates of transport was forwarded to sugar estates showing the maximum rate to be claimed by millers for the transport of planters' canes from outlying weighbridges to the factory. There was one application for a change of delimitation of factory area, which was rejected. Fourteen permits were issued to middlemen. 13,538 contracts were in force covering 30,000 planters. The number of planters who failed to enter into contracts before the 31st May showed a further decrease: 419 in 1967, compared to 750 in 1966 and 1,101 in 1965. The number of Weighbridges in operation was 110, a reduction of 4 compared with the previous year. All the weighbridges were tested prior to the crop and found accurate. They were tested again during the crop and found correct. 1,993 surprise checks were carried out during the crop. In four cases the weighing was found incorrect. Three weighers were prosecuted and warning was issued to the fourth.

21. The total acreage under sugar-cane was 204,000 arpents of which 191,734 arpents were harvested, compared to 206,000 arpents and 195,740 arpents respectively in 1966. 638,813 metric tons of sugar were produced compared to 561,760 metric tons in 1966. 523,039 long tons of sugar were exported, of which 380,000 long tons were sold at the negotiated price of £47.10 shs, which is the same as for 1966. 29,208 long tons of sugar were consumed locally. The United Kingdom was the largest customer taking 470,889 long tons, followed by Canada taking 36,150 long tons and the United States of America taking the remaining 16,000 long tons. The yield of sugar per arpent was 3.33 metric tons compared to 2.88 metric tons in 1966. Five sugar cane varieties, namely M147/44, M93/48, M202/46, E1/37 and E50/47 accounted for about 68 per cent of the crop. The remaining 32 per cent was made up of M442/51, B37172, M31/45, B3337, M253/48, B34104, M409/51 and other varieties. 154,417 metric tons of molasses were produced of which 111,930 metric tons were exported. About 8,000 tons of molasses were used in the manufacture of rum and the rest was used as fertiliser. The total production of alcohol reduced to 100°G.L. was about 1,643,000 litres of which 22,122 litres were exported.

22. The close liaison established between officers of the Department and those of the Mauritius Sugar Industry Research Institute was maintained. The research findings of the Institute were made available to the staff of the Department through a series of lectures given by the staff of the Institute during the year as well as by individual contact between officers.

23. The Department continued to direct the activities of the three committees administering the Sugar Industry Rehabilitation Fund. The Sugar Planters Rehabilitation Fund continued to operate and manage the Mechanical Pool which is organised to clear and de-stone land planted under sugar-cane. The fund operated the Pointe-aux-Sables Cane Nursery, as well as subsidiary cane nurseries in various factory areas, to provide planters with disease free planting material and planting material of newly released varieties. Small planters have continued not to take advantage of the disease free planting material available to them from subsidiary nurseries.

24. The tea industry was controlled by the Tea Control Board, which held regular meetings throughout the year. The Board was mainly concerned with the loss of crop due to numerous public holidays that occurred during the peak cropping months, local market quotas and the sale of tea to the Republic of South Africa. The " Drink more Tea " campaign was continued, albeit on a reduced scale. The compilation of quarterly and annual statistical reviews was continued.

25. The Tea Control Board held regular monthly meetings. The establishment of a Wage Council for workers of the Tea Industry and of a central agency for the local marketing of tea were among the most important items discussed.

26. La Chartreuse tea factory was purchased from Government on 1st January, 1967 by " La Chartreuse Tea Marketing Co-operative Society Ltd. ", which had so far acted as Government's Managing Agents.

27. The seven tea factories continued normal production. Bois Cheri, Nouvelle France and Corson factories brought about some new improvements to their machinery and equipment. The new tea factory at Dubreuil, built by the Tea Manufacturers (Sugar Millers) Ltd. started to operate as from October 1967 but was officially inaugurated on 8th November, 1967. The factory has a capacity of 1,500,000 lbs of made tea per annum and is processing leaf from the Small holdings Development Project, Wooton Experiment Station and other Government plantations.

28. As at 30th June 1967, 7,556 arpents were under tea, an increase of 12.1 per cent over the previous year. Plantations at full maturity comprised 3,099 arpents or 41 per cent of the total area under tea. There were 828 individual planters compared with 670 in the previous year, as a result of the allocation of small holdings under the Government tea development scheme. The eight tea factories (including Dubreuil) produced 4,829,019 lbs of made tea, an increase of 19.5 per cent over the previous year. Of this 3,499,506 lbs of a value of Rs 8,413,443 were exported.

29. As a result of setbacks from the 1960 and subsequent cyclones, the first tea development project which commenced in 1956 and was designed to develop 3,000 acres of tea, was extended on several occasions and the final clearings were completed late in 1966. This scheme has resulted in the development under tea of 212 acres of private land, 2,005 acres of Crown Land, leased to project planters and 289 acres of Crown Land, developed by the Department and leased to small holders, making a total of 2,506 acres.

30. The second tea development scheme, which commenced in 1962, envisaged the planting of 500 acres of Crown Land per annum by the Department for distribution, when established, as smallholdings of about 4 acres each. The annual target in the 1966-70 development programme is 1,000 acres of land to be developed under tea. By the end of the year 4,799 acres had been contour-surveyed, 3,593 acres cleared, 2,995 acres prepared for planting and 2,802 acres planted, of which 610 acres were planted in 1967. By the end of 1967, 335 small holdings of 4 acres each had been distributed, which is the same as 1966, no distribution having taken place in 1967.

31. Four-acre small holdings were found to be too large in the case of large number of smallholders, who were unable to maintain their holding in a satisfactory condition. It has consequently been decided that small holdings will in future be of 2 acres each and that existing 4-acre holdings that were not being properly maintained would be subdivided into 2-acre plots. Smallholders are assisted by the Co-operative Department in arrangements for short term loans for the purchase of fertiliser and so on.

32. The eight tea seed gardens, covering 69 acres, of which 35 are in bearing, were again affected by Cyclone *Gilberte* in January. Consequently only 16,458 lbs. of seed were harvested, which compares with 16,460 lbs. of seed harvested in 1966, which crop had also been affected by a cyclone in January of that year. 27,270 lbs. of tea seed were imported from Tanzania and 6,594 lbs from Malawi.

33. The annual rainfall at Wootton Tea Experiment Station was 152.87 ins compared to the average of the 17 previous years of 143.48 inches. A record weight of green leaf was obtained from the 69.74 acres of 12-16 year old tea for the tea crop year 1966-67: 484,981 lbs, which was 128,003 lbs over the previous year's record crop. The average yield per arpent was 6,954 lbs. Comparative yields for the previous tea crop year were 356,978 lbs of green leaf, giving a yield per arpent of 4,931 lbs. Yields for the months October to March of the tea crop year 1966-67 show a considerable increase over the yields for the corresponding period in the previous year. Work was continued on vegetative propagation of selected clones and trials of various rooting media. Vegetatively propagated plants were made available to project tea planters. Fertiliser experiments as well as pruning trials and comparison of jats have continued.

34. The control of the tobacco industry continued to be vested in the Tobacco Board which not only purchased, processed and stored all leaf produced but provided an extension service to the industry. Research services were provided by the Department at the Richelieu and Pamplémousses

Experiment Stations, which stations were also responsible for the production of seed of all proven varieties. The seed stocks held by the Department were sufficient for two years usings, as an insurance against natural disasters. Weather conditions were favourable at the beginning of the planting season and deteriorated thereafter. The yield and quality of the Amarello air cured crop was adversely affected but the yield and quality of Virginian flue-cured crop was considerably better than last year's crop. The acreage under Virginia tobacco decreased from 1,004 arpents planted in 1966 to 413 arpents in 1967 while the Amarello acreage increased from 200 arpents in 1966 to 344 arpents in 1967.

35. The trend towards the consumption of the cheaper air cured Amarello tobacco was further intensified during the year. 619 metric tons of tobacco of all types was produced from 757 arpents compared with 491 metric tons from 1,204 arpents in 1966. Usings of domestic leaf by both manufacturers increased once again to reach 525 tons compared to 499 tons last year. There was again a decrease of 3.8 per cent in the imported leaf used in manufacture compared with the previous year. Percentages have been falling from 24.9 per cent in 1961 to 12.8 per cent in 1966 and 9 per cent in 1967. Usings of domestic leaf have increased by 27,503 kgs and usings of imported leaf have decreased by 21,270 kgs compared to 1965.

36. The Mauritius Hemp Producers Syndicate continued to control the marketing of aloe fibre, which is processed into sacks by the Government Sack Factory for use by the sugar industry and for shipment to Burma for the bagging of rice purchased from that country. The number of fibre factories operating was again reduced by one, i.e., from 9 in 1966 to 8 in 1967. These factories produced 1,602 metric tons of aloe fibre valued at Rs 1,941,241. Fibre production increased by 50 metric tons compared with the previous year. It was estimated that there were 3,278 arpents under aloe fibre of which 2,905 were from wild plantations. 554 pure aloe sacks were produced together with 1,330,250 sacks containing a mixture of aloe fibre and imported jute and 10,501 miscellaneous sacks. In addition, filter press cloth, other fabrics, yarn and rope were manufactured. 302,154 sacks were reconditioned and exported to Burma, Madagascar and Rodrigues or were sold within the country. The operating loss of the factory was Rs 196,198 compared to Rs 186,466 in 1966.

37. There were 50 pigs of all ages of the Large White Breed at Curepipe Livestock Breeding Station and the demand for young boars and gilts has increased. Another Berkshire boar was received from Rodrigues for breeding purposes.

38. The herd of goats at Palmar Livestock Breeding Station comprised 99 Anglo-Nubians, 33 Jumna Pari, 4 British Alpine and 10 goats introduced from Rodrigues for crossing. The Rodriguan goats were crossed with Anglo-Nubians and Jumna Pari with a view to improving the Rodriguan breed.

39. At Reduit, observations on different breeds of rabbits were continued. The breeds are Flemish Giant, Chinchilla, California White and New Zealand White.

40. The Poultry Breeding Programme was continued and parent stock of 404 and 707 Thornber Hybrid Strain and parent stock 4 Hybrid Strain from Sykes were maintained for the production of layers. In addition parent stocks of Cobb's Broiler as well as Ledbreast-Pilch from Sykes were maintained for the production of broiler chicks. 308,975 eggs were produced by the various breeds of which 173,160 eggs were incubated for the supply of chicks to the public and 3,028 eggs were issued to the Animal Health Laboratory for vaccine production and 704 eggs to the Artificial Insemination Laboratory for the preparation of semen for the field. 106,222 chicks were hatched compared with 91,161 chicks in 1966. 62,179 broiler chicks were supplied to the two established commercial broiler producers compared to 49,327 broiler chicks supplied in 1966. 5,169 dressed chicken from trials and culls were sold to the public for consumption.

41. The policy of importing high grade Friesian semen from the Department of Veterinary Services, Kenya, was continued to cross with the local creole breed with a view to increasing milk production. A similar cross breeding programme in Rodrigues, using Friesian bulls imported from Australia was continued. The programme of crossing the local breed with Friesian semen is based on voluntary requests from cow keepers; the demand for Friesian semen has, however, been very low, farmers maintaining their preference to the Creole semen. The upgrading of Creole cows by using selected Creole bulls was continued. 14,232 calls for artificial insemination were received and 12,679 cows were inseminated with an overall average conception rate of 56.5 per cent.

42. The production of feed at the Livestock Feed Factory showed a slight decrease compared to last year. 4,393 tons of livestock feed were manufactured compared to 4,548 tons in 1966. 16 types of feed were offered by the factory and 3,990 tons were sold compared to 4,571 tons in 1966.

43. The health of livestock at the various departmental stations where stock is kept was satisfactory as was the animal health picture of the Island. Field staff of the Veterinary Services Division attended to 5,697 cases requiring veterinary aid of which 93 cases were concerned with infertility due to ovarian cysts.

44. The Animal Health Laboratory carried out a total of 2,238 post-mortem examinations on large and small animals and on poultry and other birds. The work of the Laboratory was concerned with the investigation of specimens submitted, general diagnosis, disease surveys and vaccine production. Vaccine production was restricted to inactivated Newcastle Disease Vaccine and Fowl Pox vaccine of which 192,000 and 140,000 doses respectively were produced.

45. The vaccination service for Poultry, commenced in 1965, was continued. The demand for this service decreased slightly from 100,338 birds vaccinated in 1966 as compared to 96,879 birds vaccinated against Newcastle disease and Fowl Pox in 1967. The vaccinators have been trained to give simple advice on management and hygiene to poultry farmers. 92,245 doses of Newcastle vaccine and 90,740 doses of Fowl Pox vaccine were sold direct to poultry keepers.

46. The annual tuberculin test was carried out using the single intradermal comparative test. 859 herd cattle and 96 milch cattle were tested. In herd cattle, there were 17 positive reactors, an incidence of 1.9 per cent. In milch cattle there were 3 positive reactors, an incidence of 3.1 per cent. All reactors were disposed of by slaughter. Live cattle imported from Madagascar for slaughter were tuberculin tested on arrival in Mauritius at the Roche Bois Quarantine Station. Of the 4,148 cattle from Madagascar tested, 125 reacted positively an incidence of 3.0 per cent. The reactors were slaughtered at Roche Bois Slaughter House.

47. To prevent the introduction of infectious/contagious diseases into Mauritius, animal quarantine facilities were maintained at Roche Bois and at Reduit. 77 ships and 19 aircraft carrying livestock were cleared. There was a substantial increase in the number of cattle and goats for slaughter passing through the Roche Bois Quarantine Station compared with the previous year. 3 Friesian Bulls, 1 Friesian bull calf and 1 Sahiwal bull imported for breeding purposes were held at Quarantine at Roche Bois. 1,442 import permits were issued together with 641 landing permits. There was a further drop in the importation of frozen beef products compared with 1966 and a substantial increase in the import of frozen mutton and offal. There were decreases in the imports of frozen goat meat and poultry and a complete stop in the importation of eggs.

48. On Land Settlements, settlers' holding were farmed satisfactorily. Climatic conditions were favourable during the year and good crop yields were obtained. Rent collection being again unsatisfactory, legal action is being resorted to. Crown Lands Elysee and Mouna formerly under the Allotment Scheme were passed under the Land Settlement Scheme and the conditions of lease revised accordingly.

49. The crop extension services were concerned mainly with increasing productivity per acre by improved crop husbandry to ensure better yields and higher incomes for farmers. Over 9,000 field visits were paid to sugar-cane and vegetable growers. Particular attention was paid to the rational use of complete fertilizers with respect to mixtures, method and time of application and the timely control of pests and diseases. Advice was tendered on the correct use of the wide range of chemicals on the local market, available for pest and disease control. The importance of choice of variety in relation to regions and the planting of disease-free material was stressed to cane farmers. The necessity for using crop rotation in foodcrop production was emphasized.

50. Sixty fertiliser demonstrations, compared to last year's eleven, were laid down on sugar cane, potatoes, onion and groundnut. Most of these demonstrations showed marked differences in favour of the use of complete fertilisers. Field demonstrations on the control of pests and diseases on food crops and vegetables were increased to 157, compared to last year's 114. 150 meetings of small planters were convened during the year throughout the island. The main subjects discussed at these meetings were the incidence of gummosis and the replacement of susceptible cane varieties by resistant ones, the timing, mode of application and the use of compound fertilisers on sugar-cane and foodcrops, the control of pests and diseases and precautions

to be taken when using pesticides and fungicides, the better utilization of available land and soil conservation. Visual aids were extensively used. Because of limited field staff, contacts with planters were mainly through more intensive group work.

51. The persistent wet season was favourable to Blight and Bacterial Wilt on potato and tomato plantations. Blight was kept under control by regular and frequent preventive fungicide sprayings. Tuber moth was a serious problem especially for potatoes planted late in the second season. Climbing cutworms caused serious damage in certain areas to the first season potato. Fruit flies remain a major pest of fruits of economic importance. Gumming disease was less severe on sugar-cane because of favourable growth conditions to the crop. The gummosis survey has been completed.

52. The inter-cropping of virgin sugar cane continued on small planters' land. Large acreages were planted to beans, maize, potato and tomato specially in the North. The possibility of inter-cropping interlines of ratoon canes has also been considerably explored. Large scale plantations of sunflower, potatoes, cabbage and beans have been tried with encouraging results.

53. The six demonstration plots run by the Extension Services continued to supply a wide range of food, fruit and forage crops. A fair amount of the cane variety M 442/51 was sold to planters as planting material. Demonstrations were carried out on varieties of potato in the first and second season, hybrid maize, groundnut, onion. Fertilizer use as well as pest and disease control were demonstrated. Fruit trees and other planting material were available for sale to the public at all times. The demonstration methods of keeping livestock on small farms and on husbandry were extended. Anglo Nubian goats were available for sale to breeders for upgrading of their stock. Permanent pit-silo demonstrations have been established at most of the centres.

54. Development of Mare Choisy continued, farmers showing considerable interest in rice growing. The Red Creole onion variety which yields about 50 per cent to 100 per cent more than the local variety has not yet found favour with farmers although about 100 lbs of seed of that variety were sold to them through the Extension Services. About 450 kilos of rice seeds were distributed to growers showing an interest in rice. About 1,000 fruit trees and ornamentals have been delivered for planting in school yards under the supervision of Extension Officers.

55. The "Produce More Food" Campaign was extended to a further eight villages. As in past years efforts were mainly directed towards the growing of fruit trees. The demand for birds of laying breeds decreased from 7,400 in 1966 to 118 in 1967 because of the saturation of the local market for eggs. Some 1,800 fruit trees were delivered as well as planting material of grasses, banana, sweet potato, cassava, pineapple and acacia.

56. To meet the imperious need for better farmers to meet the challenge of diversification of the agricultural economy and of more intensified production from the land, the Extension Service launched a campaign, towards the end of the year under review, for the establishment of Rural Youth

Clubs with the objective of grouping together the youths of rural areas, sons of our farmers who are going to be our farmers to-morrow in order to train them to become good farmers. By the end of the year 23 such clubs had been established.

57. Weekly lectures were organised from February to July at the College of Agriculture for the benefit of the public at large. In addition lectures were delivered in 21 villages as part of the Extension Service contribution to the activities connected with the Social Welfare Months organised throughout the country. The Home Economics Section gave two lectures to Social Welfare Officers as part of a refresher course designed to increase interest in home food production.

58. The estimated foodcrop production in Mauritius again rose during the year from 47,622 metric tons in 1966 to 52,936 metric tons in 1967. The area harvested increased from 8,973 arpents in 1966 to 9,788 arpents in 1967.

59. There was a substantial increase in the yield of potatoes due to favourable weather conditions. There were also substantial increases in the production of maize, cassava, tomatoes and ginger. The production of ground-nuts increased only slightly while that of peas and beans again decreased.

60. The silage demonstrations in villages were continued and eight pits were filled. The resulting silage was generally of good quality and palatable. Cowkeepers have again showed little interest in the silage produced.

61. Most professional planters now own their own sprayers for pest and disease control. However a large scale spraying by the extension staff was carried out in one area to counter the severe attack of potato tuber moth. 1,368 permits were issued for the purchase of certified seed potatoes but the subsidy on the purchase of certified seed ended in 1966. Large planters again participated in the production of the potato crop. It is estimated that 1,333 arpents were planted to potatoes during 1967. The yield was estimated at 9,200 metric tons, giving a mean yield of 6.9 tons per arpent.

62. At the Curepipe Experiment Station the road system was further extended and improved. An additional 7 acres of land was brought under cultivation. A concrete trench silo of about 100 tons' capacity was constructed. Trials with grasses and legumes including fertilizer, spacing and variety were continued. Grapefruit variety "Juddoo" seems to thrive well in this climate. Guavas continued to give satisfactory yields. The Arabica Coffee planted in 1963 fruited satisfactorily, the best trees yielding about 12 pounds of cherry. Fertilizer, spacing and variety trials with foodcrops viz. *Colacasia esculenta*, potatoes, sweet potatoes, *Sechium edule*, beans were continued. Various vegetables were grown for seed production.

63. Geese and ducks, run in association with fresh water fish ponds continued to thrive. The black Swans received from the Government of Australia in 1958 have not yet laid eggs.

64. Plaisance Experiment Station was extended by about 5 acres. The area has been fenced. Access roads have been made and the fields planted under various crops. The citrus trees yielded less than last year. Valencia and Parson Brown showed impressive yields. The coconut plants continued to thrive. The variety Citronelle grafted on different stocks showed more vigorous growth compared to Citronelle plants growing on their own roots. Yields were however not spectacular. Three out of seventy-five litchi plants grown for production of layers produced a limited quantity of fruits. Fertilizer trials were conducted on pineapple, ginger, beans and maize. Variety trials were carried out on five varieties of beans, five varieties of onions, and six varieties of sunflower. Various vegetables were planted for the production of seeds from Barkly Experiment Station and other nurseries. The mango orchard produced few fruits. The Airport Section continued to supply good quality fodder for the Curepipe Livestock Breeding Centre. A total of 641 tons of fodder were supplied during the year.

65. At Central Experiment Station at Reduit, the Citrus grove continued to supply valuable data on the behaviour of various varieties in this climatic zone. All march grape fruit trees have shown high susceptibility to Tristeza and have been uprooted. Java grape fruit established as seedlings are also showing poor growth. The two Juddoo grape fruits produced 1718 fruits of reasonable size. Mineole and Seminole Tangeloes are showing symptoms of virus diseases. Fertilizer trials on Navel, Valencia and Parson Brown oranges continue and have so far shown no significant difference between treatments. Pineapple as in the past years is not growing satisfactorily. The collection plot of various varieties of banana has been re-established after destruction by Cyclone Denisc. A peach plot of eight varieties grafted on local peach rootstock has been established. The five varieties of Persimon continued to make very poor growth and have not produced fruits. The two Tropical Beauty Apple trees are growing well and have produced a fair number of fruits. 14 introduced varieties of Avocado planted in 1965 have borne some fruits. Arabica coffee, Citronelle Grape grafted on Isabelle and Couderc rootstocks, and strawberry varieties introduced from Kenya are growing satisfactorily. On grasses fertilizer trials, population density and observations on various species and varieties have continued as well as introduction of new varieties and strains of grass and legume species. A variety trial on Cassava has been established. Variety trials on beans, onions, sweet potatoes were carried out successfully. Various vegetables were grown for seed production.

66. At La Ferme the observation plots of various grasses were maintained. About 250 tons of fodder were supplied to some 127 cowkeepers.

67. At Palmar the 60 acres of pangola established on Calcareous sand was maintained. The fodder legume, *Vigna marina*, is growing satisfactorily. *Cenchrus ciliaris* (Molopo strain) is growing very well both on the sandy area and in the red soil. Enclosures of new paddocks with stone walls continue. There has been considerable regeneration of Acacia in the walled paddocks after hand cultivation and in the absence of grazing. Malayan Dwarf seedlings of the green, yellow and red varieties were planted in various paddocks.

68. At Barkly, the development work was completed save for the installation of an air conditioning unit in the seed store. A new sales building was constructed. The existing roads were improved and partly tarred. 18,590 pounds of seed were processed and about 30 acres of land were devoted to seed production. The Station was the centre of vegetable seed production and controlled the seed producing acreage on other stations. It was also the centre of propagation of fruit trees and ornamentals. The orchards were maintained in a satisfactory condition. Sales of seeds and plants amounted to Rs 66,305 compared to Rs 72,103 in the previous year. During the months of June and July the services of Dr. S. Moreira, a citrus specialist were made available by the F.A.O. to advise the Mauritius Government on the possibility of extending the citrus plantations in the country with a view to establishing a small citrus industry to meet local requirements. An assessment was made under his guidance of the diseases present and new citrus varieties were introduced for use as stock or for supply of budwood. The Malayan Dwarf coconut varieties established at Plaisance having started to produce a fair number of fruits, the importation of these varieties from Malaya has been discontinued. The eight peach varieties grafted on local stock and the Citronelle grape variety grafted on various rootstocks have borne fruits but it is too early to assess the suitability of the peach varieties or of the grape rootstocks for local conditions.

69. At Abercrombie the grape variety Citronelle is performing well. Ten other grape varieties received in 1965 and planted as cuttings are also growing well. The mango crop was very poor.

70. It was estimated that about 170,000 people visited the Royal Botanical Gardens during the year. The gardens were maintained satisfactorily and with the assistance of the Mauritius Herbarium, the identification and labelling of plants were continued. The nursery continued the propagation of plants for sale to the public at Abercrombie Nursery and to Barkly Experiment Station. Part of the marshy areas of the gardens are being converted to paddies for the introduction and trials with varieties of rice. Rhinoceros beetle is a serious problem on palms in the gardens.

71 At Bois Marchand, the Pangola grass is well established. Local cow-keepers are allowed to remove the grass on permits from the Bois Marchand and Arsenal grass plots. These two Pangola grass plots have been of considerable assistance in relieving during the dry months the fodder shortage in the surrounding villages.

72. At Richelieu the reservoir of capacity 180,000cu. ft. has been completed and linked to the existing two reservoirs on the station. The whole station can now be irrigated with sprinklers and rainers at 4.7 atmospheres with gravity fed water, without the use of pumps. Roads have been laid on the new areas of 40 acres to link it with the rest of the Station.

73. By the close of the year it had again not been possible to commence the pilot farm in the new areas, owing to certain administrative difficulties.

74. The tobacco seed requirements of the country were produced at Richelieu and Pamplémousses, Richelieu Experiment Station together with Pamplémousses continued to provide the research facilities for the tobacco industry. Fumigation with Methyl Bromide has become a standard practice for sterilising seed beds. Permanent seed beds have now been established because with Methyl Bromide fumigation rotation of nursery seed beds can be dispensed with. The tobacco variety NC 95 which was released for commercial planting the previous year has found favour with a fair number of growers, in view of its resistance to leaf diseases, Black Shank and root knot nematodes, reasonable yields and leaf quality; it is however slightly susceptible to wind damage. Amarello is still preferred to Burleys by air curers. Seedlings of commercial varieties were raised for sale to planters in view of the increased acreage grown under tobacco this year.

75. All the tobacco leaves produced on the Station are now cured in oil curing units which allow a good control on temperature and is found to be less expensive and less troublesome than the hitherto traditional flue curing units burning wood as fuel.

76. Irrigation water was again short which interfered with the foodcrop experimental programme. A potato fertilizer trial and a maize variety trial were wiped out. A variety trial with nine varieties of groundnuts showed that the local Cabri variety gave as good yields as the best imported varieties both in weight of air dried shells as in weight of oil per acre. Experiments with sunflower were continued but results were not conclusive. Some other crops investigated on a reduced scale were banana and grapes. The mango orchard and the litchi orchard continued to make fair progress but yield of fruits were poor during the year.

77. Two varieties of rice namely the Begami variety introduced from Pakistan and the local variety, named Mare Choisy, a Patna type, were grown on the station for supplying seedlings to other stations and for bulking of seed. Four acres of land were graciously placed at the disposal of the Department by Yemen Sugar Estate for experiments in rice. The yield obtained at Yemen was approximately 1.3 metric tons of paddy per acre which is rather low, the reason being (a) considerable damage caused by birds and (b) lodging due probably to the high initial fertility of the soil, which previously carried a cane crop.

78. The usual range of tobacco diseases was observed namely *Alternaria*, *Cercospora*, *Phytophthora* and others. In tea, certain young plantations showed infection by brown blight. Potato blight was not a serious problem during the year; various diseases on potato were negligible. A survey of rice plantations showed the Pakistan variety and local variety to be relatively free of diseases. *Stemphylium* leaf spot was the major tomato disease in the Northern districts. Diseases of onion received particular attention. Pink root rot was quite virulent in areas where the onion crop has been grown year after year on the same land. Most varieties of onions show high susceptibility to this disease. On beans Anthracnose was prevalent on susceptible varieties owing to favourable climatic conditions. Halo blight was also common during the year in the wetter localities. On peas, *Ascochyta* leaf spot was very severe.

79. Dr. S. Moreira, an F.A.O. citrus consultant carried out a survey of citrus diseases and confirmed that Tristeza was present in Mauritius. Greening was found to be fairly common on most of our citrus varieties. This observation has brought the citrus propagation programme to an almost complete stop. On ginger a blight of which the causal organism is still unknown, has caused some concern to ginger growers. Coffee berry disease, was a major disease on newly introduced varieties of coffee.

80. The Plant Pathology Division was responsible for the inspection of live plant and animal products at points of entry in the country and for the issue of phytosanitary certificates for export. 1,069 plant import permits were issued as well as 612 phytosanitary certificates for plants, flowers and fruits exported. 2,987 certificates of examination were issued for plant material or plant products imported into the Island. 83 fumigation operations were carried out and 138 ships were met as well as 714 planes. The two plant quarantine greenhouses, to receive introductions, other than sugarcane, were maintained and a variety of economic and ornamental plants underwent quarantine. Among the most important plants introduced were 12 varieties of rice, 2 fodder species, 2 varieties of pineapple, 2 varieties of tobacco and 2 varieties of cotton. The sugarcane quarantine greenhouse was operated as usual on behalf of the Department by the Mauritius Sugar Industry Research Institute.

81. Numerous identification of insects were made and many species of insects have been added to the museum collection. Biological Control of various pests was continued including control of fruit flies, rhinoceros beetle and stable flies. New pesticides have been tested.

82. Analyses of the raw materials, imported for the manufacture of livestock feeds, were carried out by the Chemistry Division as well as analyses of the prepared feeds sold to the public. Analyses of fodder were continued. Underground water from different places of the Island was analysed for their suitability for irrigation purposes. Soils in the tea areas were analysed for acidity. Analyses of soil from various areas were also carried out to determine their silica content. Groundnut varieties were analysed for the oil content of kernels. Analysis was carried out on soap produced locally to compare its quality with imported soap. Fertilizers were analysed to detect possible adulteration.

83. The Engineering Division was responsible for the servicing, repair and maintenance of all departmental vehicles, tractors and machinery. At the Central Workshop some 590 vehicles, tractors and machines were serviced and/or repaired. Miscellaneous equipment was made for various divisions including gates and incubator trays for the veterinary services, grills, iron baskets and a water-wheel for the Fisheries Division. The Division was also charged with the construction of buildings provided for in the development programme including an extension of the Central Workshop, an insectarium and insecticide store for the Entomological Division. New offices for the Fisheries Division, a fumigation room for the Tobacco Warehouse, a community centre for Tea Smallholders at Dubreuil, a garage and workshop for the Tea Division at Wooton.

84. The Livestock Feed Factory sold 4,390 tons of livestock feed, manufactured from raw materials which were imported except for molasses and a certain quantity of locally produced maize. 16 different kinds of livestock feed were offered for sale.

85. The enforcement of the fishery regulations and the collection of statistics from fish landing stations were continued. Because of shortage of staff it was found impossible to continue the work of the flying squads which had been set up in 1965 to prevent the use of illegal nets and explosives. 218 contraventions were established, 72 in connection with the use of illegal nets and 16 for use of explosives.

86. Dr. Fougère, of the Fisheries Research Board of Canada continued to assist in the development of the fisheries in the island. A programme of research in salt water and fresh water fish farming was continued. It is expected that the raising of luxury products such as oysters and crabs may provide a valuable export market.

87. The two Mauritian fishing companies had a prosperous year and are likely to extend their activities into other fields of production such as salted fish and cray fish.

88. In the capital development programme 1966-70 provision was made for the construction of three fishing boats during the first two years of the programme. The 26 foot fishing boat equipped with Echo Sounder was launched on 20th June 1967 and has been named 'Solitaire'. This boat is designed as a prototype for Rodrigues fishermen. A second boat, 36 feet long and designed for offshore fishing around Mauritius and its dependencies was launched on the 8th of November 1967 and has been named 'Explorer'. Construction of the third fishery research vessel was fairly well advanced by the end of the year. This 85-foot fishing vessel is intended for research in deep sea fishing off the shores of Mauritius.

89. Rodrigues had a fairly favourable first season which was followed by catastrophic weather conditions later in the year. Drought conditions prevailing during the second season were the worst for over ten years leading to a near famine in November and December. Towards the end of December, Cyclone Carmen hit the island causing considerable losses of livestock and damage to the newly-planted foodcrops and to fruits trees.

90. It is estimated that the farming community of Rodrigues comprises some 4,000 families, who are mostly small farmers. At the end of the year, as a result of the Land Rehabilitation and development programme, the total number of leased farms was as follows: 988 farms on new lands in good fertility, 1,379 farms on terrace land undergoing rehabilitation, 730 vegetable plots on very fertile alluvial flats and 1,519 farms on eroded slopes in poor fertility.

91. The value of exports from Rodrigues has shown again a slight increase over the previous year. There has been a sharp decrease in the export of sheep and goats but a fairly marked increase in the export of pigs, salted fish and octopus. Onion production was lower compared to the previous

year due to the drought at the end of the year. The whole island's production of onions, garlic and limes are now marketed through the Rodrigues Agricultural Production and Marketing through the Society acting as buying agents for the Mauritius Agricultural Marketing Board.

92. Development work progressed satisfactorily. About 350 holdings were terraced and paddocked, 2 storage tanks and 2 dams were completed, some 63,000 feet of water pipe and 235 taps were installed. The development of two new breeding centres was well advanced.

93. The Agricultural Training Farm established at Marechal at the end of 1964 and financed largely by the United Kingdom Committee for the Freedom from Hunger Campaign has continued to develop most satisfactorily under the able direction of the Reverend Father H. G. Smith.

II. Boards and Committees

94. The Director of Agriculture or his representative served on the following boards and committees:

Agricultural College Advisory Board

Agricultural Marketing Board

Board of Agriculture, Fisheries and Natural Resources

Board of Examiners of the College of Agriculture

Board of Examiners for the Registration of Agricultural Chemists

Cane Release Committee

Comité de Collaboration Agricole—Maurice—Réunion—Madagaskara

Cyclone and Drought Insurance Board

Development Advisory Council

Fisheries Committee

Government Sack Factory Board

Irrigation Committee

Land Settlement Committee

Malaria Advisory Board

Mauritius Sugar Industry Research Institute Executive Board

Mauritius Sugar Industry Research Advisory Committee

Sugar Industry Rehabilitation Fund Committee

Sugar Industry Reserve Fund Committee

Sugar Millers' Rehabilitation Fund Committee

Sugar Planters' Rehabilitation Fund Committee

Tea Control Board

Tea Manufacture (Sugar Millers) Ltd. Board

Tobacco Board.

III. Board of Agriculture, Fisheries and Natural Resources

95. The Board functions under Ordinance No. 29 of 1957. The following advisory committees were set up by the Board for specific purposes:

- (a) The Cane Release Committee
- (b) The Fisheries Committee
- (c) The Irrigation Committee
- (d) The Land Settlement Committee.

96. The Board met only once during the year under review. It heard a report from the Mauritius Sugar Industry Research Institute on the latest picture regarding the spread and control of the sugar cane gumming disease. Efforts at crop diversification, particularly in regard to the planting and marketing of potatoes, peanuts, sunflower and soya beans were discussed.

97. No new variety of sugar cane was released in 1967 and consequently no meeting of the Cane Release Committee was held during the year.

98. The list of approved cane varieties for cultivation in 1967, Proclamation No. 3 of 1967, was as follows:

FIRST SCHEDULE

M. 134/32 (red, white and striped)	M. 13/53
M. 112/34	M. 13/56
M. 423/41	M. 377/56
M. 147/44	Ebene 1/37
M. 31/45	Ebene 50/47
M. 202/46	BH 10/12
M. 93/48	B. 3337
M. 99/48	B. 34104
M. 253/48	B. 37161
M. 409/51	B. 37172
M. 442/51	N. Co. 376

SECOND SCHEDULE

M. 112/34	...	... 31st December, 1969
M. 423/41	...	... 31st December, 1969
BH 10/12	...	... 31st December, 1969
M. 147/44	...	... 31st December, 1973
B. 3337	...	... 31st December, 1970
B. 34104	...	... 31st December, 1970

- (1) The varieties of sugar cane which may be planted and propagated in this country are those specified in the First Schedule.
- (2) The varieties of sugar cane set out in the first column of the Second Schedule shall be uprooted by the date set out in the second column of the said Schedule.

99. No meeting of the Fisheries Committee was held during the year.

100. The Irrigation Committee met on nine occasions. It was concerned with the allocation of water for irrigation purposes from the Magenta canal and La Ferme and La Nicolière reservoirs, the repair of the Magenta canal to reduce losses, the allocation of irrigation water to new planters or increased allocations to planters with existing water rights.

101. No meetings of the Land Settlement Committee were held.

IV. Mauritius Chamber of Agriculture

102. The Chamber of Agriculture continued to play an important role in the Agricultural affairs of the country. Its representatives took part in the annual discussions in the United Kingdom in connection with the Commonwealth Sugar Agreement. It appointed a committee to administer the Sugar Industry Reserve Fund as well as nominated representatives to sit on numerous boards and committees. The work of this organisation was fully reported in its annual report.

V. Comité de Collaboration Agricole Maurice — Réunion — Madagasikara

103. The Sixteenth annual meeting of the Comité took place in Réunion from the 4th to the 11th November 1967. Six delegates from Mauritius, of whom one representing the Department of Agriculture, attended the conference. Madagascar was represented by seven delegates and Réunion by five. Visits to various research stations, including l'Institut de Recherches Agronomiques Tropicales, the Plant Breeding Station of the Syndicat des Fabricants de Sucre, the Livestock Breeding Station of the S.I.C.A. at Plaines de Cafres and plants processing agricultural produce, including a tea factory, a sugar factory, a bagasse board factory. Matters discussed included the control of the Fiji disease, plant import regulations, and Dr. Moreira's report on citrus culture in Mauritius and Reunion. The programme for 1968 was approved.

104. Among the visits sponsored by the Comité between the three territories and of special interest to Mauritius were the following:

- (a) Visit of Mr. R. Antoine and Dr. A. Orian to Madagascar.
- (b) Visit of Mr. S. Staub to Réunion.
- (c) Visit of Messrs. Ross and Lalouette, of the Mauritius Sugar Industry Research Institute, to Réunion.
- (d) Visit of 2 lecturers and 6 students of the College of Agriculture to Madagascar and Réunion.
- (e) Visit to Mauritius of the students and lecturers of the College Agricole of Réunion.
- (f) Visit to Mauritius of Messrs. Ravelajona and Morat of Madagascar.
- (g) Visit to Mauritius of Mr. Rieul of Réunion.

VI. College of Agriculture

105. The main objective of the College is the training of technologists and technicians for the agriculture and sugar industry of Mauritius. To this end, the College offers 2 full time 3 Year Diploma courses, a full time 1 Year Certificate Course in Tropical Agriculture and part time courses in Cane Cultivation.

106. There is now a very acute shortage of diplomas in the country and this is reflected by the numerous vacancies in the Department and in the Sugar Industry.

107. The full-time teaching staff consisted of four lecturers and four assistant lecturers. Twenty seven part-time lecturers from the Mauritius Sugar Industry Research Institute, other Divisions of the Department and other Departments lectured in Sugar Technology, specialised branches of Agriculture, Engineering and Meteorology.

108. The work of the College was handicapped by the absence of 4 full time staff members—2 having gone on study leave abroad and 2 being promoted to other divisions in an acting capacity for part of the year.

109. The organisation of the Entrance Examinations was this year the responsibility of the University of Mauritius; consequently the present first year students are University students.

110. Two new overseas students were admitted.

111. The two Entrance scholarships were awarded to Messrs. R. Cadet de Fontenay and P. Ng Chun Hing and the Aime de Sornay Scholarship to Mr. K. T. C. Ruhee.

112. The number and distribution of students were as follows:

<i>Course</i>	1965	1966	1967
Full-time Diploma (3-year) ...	57	64	67
Full-time Certificate in Tropical Agriculture...	6	8	—
Part-time Certificate in Cane Cultivation ...	25	19	13
Part-time Certificate in Sugar Analysis ...	7	—	—
Other part-time ...	3	4	3
TOTAL ...	98	95	83

113. The results of the Annual Examinations held in March were as follows:

	1966		1967	
	<i>Sat</i>	<i>Passed</i>	<i>Sat</i>	<i>Passed</i>
Diploma in Agriculture, 1st Year ...	19	11	16	15
Diploma in Agriculture, 2nd Year ...	12	12	11	10
Diploma in Agriculture, 3rd Year ...	6	6	12	12
Diploma in Sugar Technology, 1st Year ...	7	6	12	8
Diploma in Sugar Technology, 2nd Year ...	5	5	6	6
Diploma in Sugar Technology, 3rd Year ...	6	6	5	5
Certificate in Cane Cultivation ...	19	13	15	12
Certificate in Tropical Agriculture ...	6	3	5	3

114. The 6 students who failed at the first Year Diploma Examinations were allowed to repeat the year. Two students were awarded the Honours Diploma in Agriculture and one in Sugar Technology.

115. On the basis of the examinations results, Mr. Gabriel Soopramanien was awarded the laureateship in Agriculture and Mr. Pierre Suzor that in Sugar Technology.

116. Under the auspices of the Comité de Collaboration Agricole Maurice—Réunion—Madagasikara, six students accompanied by two lecturers visited Réunion island and Madagascar. We also received a delegation each from Reunion and Madagascar.

117. In view of the impending taking over of the College by the University, the presentation of the Diplomas and prizes has been postponed until April 1968.

VII. Arbitration and Control Board

118. The Arbitration and Control Board operated under the Sale of Canes (Control) Ordinance. The executive machinery of the Board was run as a division of the Department.

MEETINGS OF THE BOARD

119. The Board held twenty-five meetings during the year as follows:

Three meetings in connection with the assessment of sugar to planters;

Six meetings in connection with cane testing;

One meeting in connection with the refund of transport costs to planters;

Two meetings in connection with the changes of delimitation of factory areas;

Two meetings in connection with the closing down of weighbridges;

One meeting in connection with the fertiliser value of molasses;

Eight meetings in connection with the protests against assessment of sugar;

Two meetings in connection with the installation of automatic weighbridges.

CANE TESTING

120. The number of tests carried out on the canes supplied by 236 planters or groups of planters and 137 miller-planter estate sections totalled 26,826. The tests were carried out at 22 factories. The corresponding figures for the 1966 crop were 21,515 tests in respect of 239 planters or groups of planters and 134 miller-planter estate sections, supplying canes to 22 factories.

ASSESSMENT OF SUGAR

121. Following the publication of the figures of the final assessment of sugar to planters for the 1966 crop, fifteen co-operative credit societies and eight planters lodged protests against the awards made by the Board. All the protests were considered by the Board and various measures were decided upon to remove the causes of complaint. However, in no case was the assessment varied. Four co-operative credit societies withdrew their protests.

COST OF PRODUCTION

122. Questionnaires were forwarded to fifty five planters, selected according to the weight of cane produced and to the twenty three sugar estates with factories to secure the data necessary for the computation of the costs of production.

TRANSPORT COSTS

123. Prior to the crop, a schedule of rates of transport was forwarded to sugar estates with factories, showing the maximum rate claimable by millers for the transport of planters' canes from the various outlying weigh-bridges to the factory in each factory area.

124. The schedule was based on the following formula for transportation by road;

$$C = Rs (2.35 + 0.17m)$$

where 'C' is the cost of transport per ton of cane and 'm' the number of miles over which transport is effected.

125. According to law, the transport of planters' canes by millers by light railway is claimable at the road rate and limited to the cost of transport over a maximum of four miles. Millers reimburse planters for expenditure incurred in the transport of their cane over distances in excess of four miles at a rate fixed by the Board of Re 0.17 per ton/mile.

DELIMITATION OF FACTORY AREAS

126. One application for changes of delimitation of factory areas was received but it was rejected.

PERMITS TO MIDDLEMEN

127. Permits were issued to forty middlemen for the crop.

COMPLAINTS AGAINST MIDDLEMEN

- (a) There were forty seven complaints against middlemen by planters. The majority of disputes were settled between the parties in presence of an officer of the Board.
- (b) Middlemen, to whom instructions have been issued as to the way their books must be kept, were called at the office of the Board and their books were examined. Those who failed to conform to the Board's instructions were given a warning.

CANE CONTRACTS

128. 11,193 Contracts were registered during the 1967 crop. The total number of contracts in force was 13,538 covering some 30,000 planters.

BREACH OF SALE OF CANES (CONTROL) ORDINANCE

129. 3 cases of breaches of Sale of Canes (Control) Ordinance were reported to the Police by the Board.

The number of planters who failed to enter into contract before the 31st of May totalled 419 compared to 750 in 1966.

CANE VARIETIES

130. During the year under review, the varieties approved for planting were the following:

M. 134/32 (red, white and striped), M. 112/34, M. 432/41 M. 147/44, M.31/45, M.202/46, M.93/48, M.99/48, M.253/48, M.409/56, M.442/51, M.13/53, M.13/56, M.377/56, Ebene 1/37, Ebene 50/47, BH 10/12, B.3337, B.34104, B.37161, B.37172, N. Co. 376.

CONTROL OF CANE WEIGHBRIDGES

131. The number of weighbridges in operation was 110, compared to 114 in 1966, four having closed down with the Board's approval. All the weighbridges were tested for accuracy prior to the crop and found correct on first examination. During the months of August and September 5 additional inspections were made at the Managers' requests. All the weighbridges were tested again in October and all of them were found to be correct.

SURPRISE CHECKS CARRIED OUT AT WEIGHBRIDGES DURING THE CROP

132. During the crop, 1,993 surprise checks were carried out and 1,818 vehicles were reweighed (520 carts and 1,298 lorries). In four cases the weighing was found to be incorrect. Three Weighers were prosecuted and a warning was issued to the fourth.

VIII. The Sugar Industry

CROP RESULTS

133. Considered as a whole, the vegetative season was rather better than average, though the crop suffered to a certain extent from an early cyclone of considerable intensity. The climatic conditions on the other hand were distinctly unfavourable during the maturation season. The combined effect of above average rainfall and night temperatures were unsuitable to promote the maturation of sugar cane to high sucrose content. The climatic conditions have been similar to those which prevailed in 1965 and the crop too bears a similarity with that of 1965 both in respect of high yield of cane per arpent and low sucrose content. The total area under cane was 204,000 arpents of which 191,734 arpents were reaped, by comparison with 206,000 arpents and 195,740 arpents respectively in 1966. This crop was the second largest after that of 1965 in respect of cane, but in respect of sugar it is the third in importance after that of 1965 and that of 1963. Hereunder are some of the crop results compared with those of 1966:

	1967	1966
M. Tons of cane reaped	... 5,814,468	4,842,915
Sugar produced ...	... 638,813	561,800
Tons of cane per arpent	... 30.3	24.7
Tons of sugar per arpent	... 3.33	2.88
Yield of sugar per cent cane	... 10.98	11.60
Hourly crushing rate	... 101.9	97.3
Daily crushing rate ...	... 1,943	1,904

CANE VARIETIES

134. In order of importance, the main varieties making up the 1967 crop were the following: M 147/44, M 93/48, M 202/46, E 1/37 and E 50/47. The above mentioned varieties accounted for about 68 per cent of the crop and the remaining 32 per cent was made up of M 442/51, B 37172, M 31/45, B 3337, M 253/48, B 34104, M 409/51 and other varieties.

QUOTAS AND PRICES

135. The negotiated price quota for the calendar year 1967 under the Commonwealth Sugar Agreement was 380,000 long tons at the negotiated price of £47-10shs, which is the same as for 1966. Local consumption of sugar amounted to 29,908 long tons, and 523,039 long tons were exported.

SUGAR EXPORTS

The exports of sugar were as follows:

<i>Destination</i>	<i>Long Tons</i>	
	1966	1967
United Kingdom ...	424,769	470,889
Malaysia ...	10,320	—
Canada ...	111,970	36,150
U.S.A. ...	14,500	16,000
TOTAL ...	561,559	523,039

MOLASSES AND ALCOHOL

136. The production of molasses amounted to 154,417 metric tons. During the year, 11,930 metric tons were exported. About 8,000 tons of molasses were used in the manufacture of rum, and a certain quantity was used as fertiliser. The production of alcohol, converted into pure alcohol, amounted to 1,643,000 litres, the greater part of which was used locally as rum, denatured spirit and in the manufacture of vinegar. 22,122 litres of high strength spirit were exported.

MAURITIUS SUGAR INDUSTRY RESEARCH INSTITUTE

137. The institute continued to provide the research services for the industry and undertook extension work amongst the larger farmers. The Department of Agriculture was responsible for extension work amongst small cane farmers. Throughout the year, close liaison was maintained between the staff of both organisations and the research findings of the Institute were thus made fully available to the small farmer. The work of the Institute is fully recorded in its annual report.

THE SUGAR INDUSTRY REHABILITATION FUND

138. This fund, together with the Sugar Millers' Rehabilitation Fund and the Sugar Planters' Rehabilitation Fund, continued to serve the industry. The latter fund operated the Mechanical Pool and the Cane Nursery at Pointe-aux-Sables and, in co-operation with the industry, established subsidiary cane nurseries in certain factory areas. The nurseries supply disease-free planting material and cuttings of newly released varieties to planters while the Mechanical Pool supplies heavy tractors with equipment for the clearing and de-stoning of land.

IX. Tea Industry

TEA CONTROL BOARD

139. (a) The Board which was established under the Tea Industry Control Ordinance 29 of 1959 as amended by Ordinance 29 of 1961 and Ordinance 37 of 1963, held regular monthly meetings throughout the year. The main items with which it was concerned during the year 1967 were:

- (1) The question of Public Holidays in so far as it affects the economy of the Tea Industry was again the subject of representation and discussion with the Ministry of Agriculture and the Ministry of Labour. The desirability of establishing a wages council for workers in the Tea Industry was considered.
- (2) The feasibility of organising a Central Marketing of Tea to meet the requirements of the local market was investigated in consultation with the Agricultural Marketing Board, but no final decision has yet been reached on this matter.
- (3) Some 50,000 tea sample packets were forwarded by various manufacturers for distribution to visitors at Expo 67 in Canada.

Our tea samples were favourably reported upon and nine Canadian firms wrote for fuller information on our export possibilities.

- (4) The matter of Customs Tariff relating to machinery, equipment and apparatus imported for use in Tea Factories was examined by the Board and successfully discussed with the Customs Authority with a view to reducing the high duty claimed on certain items.
- (5) An invitation for a Mauritian Representative to sit on the International Tea Committee was received towards the end of the year. Although the Board was in favour of such a representation in principle, it considered that further information was needed before a final commitment in this respect could be accepted.

(b) Exports of Tea to South Africa, practically a new market for the Mauritius produce, has amounted to 489,698 kilos (1,079,680 lb) during the year.

(c) Steps are being taken to fill in early 1968 the post of Executive Assistant which remained vacant during the year under review.

STATISTICAL

140. The Board continued to issue its quarterly and annual statistical reviews.

CHARTREUSE TEA FACTORY

141. On 1.1.67 "La Chartreuse Tea Marketing Co-operative Society Ltd." which was Government's Managing agents purchased Chartreuse Tea Factory and is running it as a private concern. Although the climatic conditions were more or less favourable to the tea crop, this factory had been

operating below its normal capacity during the year partly because part of the leaf from the Tea Experiment Station, Wooton, was consigned to another factory, for the reason that at the end of 1966 the daily intake of leaf of the factory exceeded factory capacity on two occasions when all planters had increased their plucking rounds to cope with the Christmas and New Year Holidays.

CLIMATE

142. Climatic conditions were rather favourable for the production of tea. One tropical cyclone "Gilberte" which passed close to the island in mid-January, did some damage to the flush on the bushes. Rainfall for the year, as measured at the Tea Experimental Station totalled 152.87 inches.

TEA FACTORIES

143. The seven factories, including Mare Anguilles, continued normal production. Bois Cheri, Nouvelle France and Corson factories underwent some improvement in equipment and processing methods during the year.

144. The new factory at Crown Land Dubreuil went into operation in October 1967, although it was officially inaugurated on 8.11.67, and has been processing the leaf from the Smallholdings Development Project, Wooton and other Government Plantations. The factory has a capacity of $1\frac{1}{2}$ million pounds of made tea per annum.

MAURITIAN TEA

145. Production rose by 475,980 lbs (11 per cent) over last year and totalled 4,829,019 lbs (1966, 4,353,039 lb); approximately 18 per cent of the total production was consumed locally, the remainder being exported, mainly to the United Kingdom, although the Republic of South Africa had during the last quarter of the year 1966 started to purchase substantial quantities of Mauritian tea. The quantity of tea sold on the London auction was 19,465 chests as compared to 21,212 chests in 1966. The average price obtained per pound was 3.22d above the 1966 level, (3/8.4d compared with 3/5.18d). This slight rise, however, proved to be due to a temporary upsurge on price consequent on a dockers' strike in the London docks. Exports of tea to South Africa increased during the year and by the end of the year had reached over a million lb.

DEVELOPMENT PROJECT

146. The first Tea Development Project which was commenced in 1956, was designed to develop 3,000 acres of new land under tea during the five years 1956-61. As a result of setbacks from the 1960 and subsequent cyclones, the scheme was extended on several occasions, the final clearings were completed late in 1966 and the land developed in 1967.

147. The total area of land developed under this scheme has been: private land 212 acres; Crown Land leased to medium scale planters (50-300 acre holdings—2,005 acres); Crown Land developed by Government and leased as smallholdings 289 acres: a total of 2,506 acres.

NEW DEVELOPMENT PROJECT

148. The second Tea Development Project was commenced in 1962 and envisaged the planting of 500 acres of Crown Land per annum by Government for eventual distribution, when established, as smallholdings. The current development programme (1966/70) envisaged an annual target of 1,000 acres of land cleared and planted under tea.

149. By the end of the year a total of 4,799 acres had been contour surveyed, 3,593 acres cleared, 2,995 acres prepared for planting and 2,802 acres planted, of which 610 acres were planted in 1967. The total number of smallholdings distributed to date is 335, each of approximately 4 arpents. But it was found that a 4-acre holding was too large for a good many small holders who were unable to maintain their holding in a satisfactory condition and had requested that the size of their plots be reduced. It has accordingly been decided that future small holdings would be of 2-acres each; and the existing holdings that could not be satisfactorily maintained by smallholders should also be sub-divided into 2-acre plots. Work on the sub-division of plots has been initiated during the year under review.

TEA SEED

150. 27,270 lbs of first grade tea seed were imported from Tanzania and 6,594 lb from Malawi. The harvest from local seed gardens was again affected by cyclone "Gilberte" in January. 16,458 lbs of seed were harvested from the 35 acres of tea seed gardens in bearing as compared to 16,460 lbs in 1966. The total area of tea seed gardens remains at 69 acres.

151. Selection of seed bearers of selected crosses which was first started in 1966 was continued.

TEA EXPERIMENTAL STATION

152. Climatic conditions at Wooton, as already stated, were rather favourable for leaf production.

153. The table below shows the monthly distribution of rainfall for the year, compared with the average for the last 17 years:

		<i>17-year average ins. per month</i>	<i>1967 ins. per month</i>
January	...	18.30	22.91
February	...	16.33	8.14
March	...	20.36	13.36
April	...	12.57	15.37
May	...	9.49	7.91
June	...	11.98	9.37
July	...	10.96	16.45
August	...	9.81	12.42
September	...	7.05	6.52
October	...	5.95	12.52
November	...	6.76	14.87
December	...	13.38	13.13
ANNUAL AVERAGE	...	143.48	152.87
			Total for the year

154. The daily records of soil temperature at depths of 4", 8" and 12" started in October 1965 were maintained during the year.

155. The total green tea leaf harvested from the 69.74 acres of tea in bearing (12-16 years old) at the Tea Experimental Station for the season 1966-67 was 484,981 lb, i.e. 128,003 lb over the previous year. Monthly yields in pounds of green leaf and the percentage of the total crop for the crop year 1966-67 compared with the two previous years were as follows:

		1964-65		1965-66		1966-67	
		lb	%	lb	%	lb	%
July	...	2,919	0.848	8,751	2.45	4,892	1.01
August	...	3,592	1.044	244	0.07	5,949	1.23
September	...	8,108	2.357	13,350	3.74	13,178	1.72
October	...	28,720	8.352	26,243	7.35	38,778	7.99
November	...	31,972	9.298	22,536	6.31	47,450	9.78
December	...	53,550	15.573	55,145	15.45	76,298	15.73
January	...	53,982	15.698	44,373	12.43	61,998	12.78
February	...	52,353	15.224	59,762	16.74	78,687	16.23
March	...	47,929	13.941	41,493	11.62	75,011	15.47
April	...	34,422	10.010	39,831	11.15	46,318	9.55
May	...	17,673	5.139	29,585	8.29	23,487	4.84
June	...	8,652	2.516	15,665	4.40	12,935	2.67
TOTAL	...	343,872	100.000	356,978	100.00	484,981	100.00

Average yield of Green Leaf in lb per acre

1964-65	1965-66	1966-67
lb	lb	lb
4,931	5,120	6,954

156. Extension work amongst Project Planters and Smallholders was one important aspect of the work with which the Division had been concerned. To even out production during the year, more particularly during the winter months, planters were advised on pruning, tipping and fertilising: they were instructed to commence pruning in April to finish at latest in June and to have recourse every year to the three kinds of pruning on their plantations, part of which to be light-skiffed at 28" from the ground and tipped 2" higher, part to be deep skiffed at 24" and tipped 6" higher, and the remainder to be clean-pruned at 22" and tipped 8" further, so that in each case, the height of the plucking table would not be less than 30" from the ground.

157. With regards to fertilising they were advised to make at least three applications during the year, as follows: first application consisting of 200 lbs. of sulphate of Ammonia per arpent to be made within the first month from the date of pruning, the second application of an N.P.K. mixture consisting of 275 lb of sulphate of Ammonia, 75 lb of Muriate of Potash and 50 lb of Superphosphate, a total of 400 lb of mixture per arpent to be made in early September, the third application consisting of 150 to 200 lb per arpent of granulated 15:15:15: or 20:10:10 to be made in December at the onset of summer rains,

VEGETATIVE PROPAGATION

158. Selection of clones and their multiplication in the Mist Propagators at Wooton, on other Government Properties and private plantations were continued on a large scale. Some 1,650 vegetatively propagated plants of selected clones, transplanted at Wooton for the supply of cuttings for further propagation, are flourishing. Vegetatively propagated plants were made available to prospective tea planters.

159. A large hardening shed (size 64 ft × 54 ft) was erected to store the vegetatively propagated plants prior to disposal; another shed under corrugated iron sheets was also erected for the storage and manipulation of rooting media and potting for the Mist Propagators.

160. Various experiments, old and new, on fertiliser, pruning, tipping and comparison of jats on young and mature tea have been continued.

161. The number and acreages of tea plantations were, at 30th June 1967, as follows:

Total number of plantations	...	828		
			<i>Arpents</i>	
Aggregate area	...	7,556.2		
Area of mature Plantations (approx.)	...	3,099.5	(area 10 years old and over)	
Area in partial bearing (approx.)	...	2,625.0	(over 3-9 years old)	
Area not in bearing (approx.)	...	1,831.7	(area under 3 years old)	
<i>Extent (Arpents)</i>		<i>Aggregate area</i>	<i>% of total area</i>	<i>No. of Plantations</i>
0 to less than 5	...	1,846.9	24.5	760
5 to less than 25	...	307.9	4.1	34
25 to less than 100	...	923.1	12.2	15
100 and above	...	4,478.3	59.2	19
TOTAL	...	7,556.2	100.0	828
				<i>Average Size</i>
				2.4
				9.1
				61.5
				235.7
				9.7

The largest plantation under single management was just about 928 arpents. There were 79 plantations of under one arpent.

PRODUCTION

162. Mauritius produced 4,829,019 lbs of Black tea in 1967. The output of factories over the past five years was as follows:

<i>Factory</i>		<i>1963 lbs</i>	<i>1964 lbs</i>	<i>1965 lbs</i>	<i>1966 lbs</i>	<i>1967 lbs</i>
Bois Cheri	...	1,086,548	937,143	1,279,416	1,317,467	1,295,659
La Flora	...	806,447	839,524	865,739	895,093	918,440
Usine Corson	...	534,996	514,681	578,367	525,222	466,531
Pont Colville	...	291,495	241,495	210,372	192,122	268,300
Nouvelle France	...	105,713	226,921	315,862	365,461	461,837
Chartreuse	...	431,997	310,769	579,592	999,774	1,114,346
Mare Anguilles	...	—	—	—	57,900	162,151
Dubreuil	...	—	—	—	—	141,755
TOTAL	...	3,256,891	3,070,533	3,829,348	4,353,039	4,829,019

163. The total export to all destinations was 3,499,556 lb at a value of Rs 8,413,443 which compared with previous years as under:

<i>Destinations</i>	<i>1963 lbs</i>	<i>1964 lbs</i>	<i>1965 lbs</i>	<i>1966 lbs</i>	<i>1967 lbs</i>
United Kingdom ...	2,150,257	1,697,691	2,346,135	2,631,950	2,351,479
South Africa ...	6,482	6,158	18,943	121,360	1,079,680
New Zealand ...	—	—	—	7,783	3,241
Australia ...	—	—	—	—	44
Eire ...	—	—	27,670	31,601	4,862
Madagascar ...	1,841	3,688	5,408	16,368	14,384
Reunion ...	—	—	—	8,208	2,165
Unites States of America ...	16,902	—	—	—	4,319
Seychelles ...	11	—	—	—	—
Comores Islands ...	—	93	—	1,003	800
Kenya ...	—	17,548	23,444	27,355	28,239
Malaysia ...	—	—	756	—	2,161
West Germany ...	—	—	9,975	5,311	—
Canada ...	—	—	2,269	2,851	7,410
British Indian Ocean Territories ...	—	—	—	1,149	573
Juan de Nova ...	—	—	—	99	—
France ...	—	—	—	—	199
TOTAL ...	2,175,493	1,725,178	2,434,605	2,855,038	3,499,556

164. Imports of Tea were as follows:

<i>Origin</i>	<i>1963 lb</i>	<i>1964 lb</i>	<i>1965 lb</i>	<i>1966 lb</i>	<i>1967 lb</i>
China ...	8,668	11,130	13,348	10,406	10,519
Hong Kong ...	2,412	1,978	421	—	318
Ceylon ...	1,466	494	942	898	1,135
India ...	705	9	238	66	214
Formosa ...	736	—	—	—	—
United Kingdom ...	—	1,129	511	452	485
Kenya ...	—	8,129	—	—	—
Japan ...	—	—	970	1,323	1,058
TOTAL ...	13,988	22,869	16,430	13,145	13,729

X. Tobacco Industry

165. Production of cured tobacco was limited to the estimated requirements of local cigarette manufacturers, British-American Tobacco Co. (M'tius) Limited, and Amalgamated Tobacco Corporation (M'tius) Limited.

166. The industry is controlled by a Board which publishes annually a full report on the industry.

CROP CONDITIONS

167. Weather conditions were favourable at the beginning of the planting season, and deteriorated thereafter. The humid and warm conditions severely affected the yield and quality of the Amarello air-cured crop. The yield and quality of the Virginian flue-cured crop were not affected by adverse weather conditions, save in a few cases,

168. Leaf spot diseases "frogeye" and "alternaria" were severe in Amarello plantations, particularly in the neighbourhood of Triolet, Pamplemousses. The incidence of the diseases in the Virginian plantations was negligible. "Virus" diseases were observed in many Amarello plantations, and were virulent in a few cases. "Bacterial wilt" was severe in the locality of Riche Mare, Flacq, on land repeatedly planted to tobacco. "Mould" attacked Amarello in the air-curing sheds and a fair quantity of unmarketable tobacco was destroyed.

169. "Root knot nematodes" were less troublesome than in the previous years. "Cutworms", "Caterpillars" and "Leaf miner" were less numerous than in previous years, being kept under control with the recommended insecticides.

PERMITS

170. The number of permits issued for the planting of tobacco in 1967, compared with the previous year was as follows:

		1966 (arpents)	1967 (arpents)
Flue-cured Virginia	...	1,004	413
Air-cured Amarello (1st season)	...	72	364
Air-cured Amarello (2nd season)	...	197	—
TOTAL	...	1,273	777

Permits for smaller acreage for Flue-cured Virginia were issued in 1967. The decrease in acreage for Flue-cured Virginia was due to a switch-over in demand from Virginian cigarettes to the cheapest brands of cigarettes containing mainly Amarello air-cured following the increase in Excise duty on Virginian flue-cured tobacco, from Rs 20 to Rs 26 per kilogramme, and the decrease in Excise duty on Amarello air-cured tobacco, from Rs 20 to Rs 18 per kilogramme, on 20th July 1966. The Excise duties were again increased by 5 per cent on 8th November 1967, thus causing a further upset in marketing conditions.

PRODUCTION

171. The production of tobacco in 1967, compared with 1966, was as follows:

		1966		1967	
		Arpents planted	Kgs	Arpents planted	Kgs
Flue-cured Virginia	...	1,004	414,663	413	267,314
Air-cured Amarello (1st season)	...	72	77,121	344	311,278
Air-cured Amarello (2nd season)	...	*128	—	—	40,427*
TOTAL	..	1,204	491,784	757	619,019

*Air-cured Amarello (2nd-season).—128 arpents were planted at the end of 1966, and 83 arpents were harvested in 1967; the balance of 45 arpents were destroyed in cyclone "Gilberte" of January 1967, and by root diseases,

YIELDS AND RETURNS

172. The yield of leaf and the financial return to producers of flue-cured Virginia were higher than in 1966, while the yield of leaf and the financial return to producers of air-cured Amarello were lower:

<i>Average yield per arpent</i>			
		1966	1967
		Kgs	Kgs
Flue-cured Virginia	...	413	647
Air-cured Amarello (1st season)	...	1,071	905
<i>Average return per arpent</i>			
		1966	1967
		Rs	Rs
Flue-cured Virginia	...	2,744	4,592
Air-cured Amarello (1st season)	...	2,754	2,165
<i>Average value per kg</i>			
		1966	1967
		Rs	Rs
Flue-cured Virginia	...	6.64	7.09
Air-cured Amarello (1st season)	...	2.57	2.39

QUALITY

173. The Virginia flue-cured tobacco was of better quality than in the previous year, while the Amarello air-cured tobacco was of inferior quality:

<i>Year</i>		<i>Percentage of Bright and Medium grades</i>				
		1963	1964	1965	1966	1967
Flue-cured	...	91	91	89	81	84
Air-cured	...	32	34	12	19	17

LOCAL MANUFACTURE

174. The Manufacturers' purchases and usings of domestic and imported leaf were as follows:

<i>1967-Purchases</i>				<i>% Total Imported</i>	<i>C.I.F. Value per kg.</i>	
	<i>Domestic</i>	<i>Imported</i>	<i>Total</i>		<i>Imported</i>	<i>Domestic</i>
	Kgs	Kgs	Kgs		Rs	Rs
B.A.T. Co. Mts. LTD...	427,415	20,232	614,083	3.3	10.53	5.15
A.T.C. Mts. LTD. ...	166,436					
TOTAL ...	593,851	20,232	614,083	3.3	10.53	5.75

<i>1967-Usings</i>				<i>% Total Imported</i>	<i>C.I.F. Value per kg.</i>	
	<i>Domestic</i>	<i>Imported</i>	<i>Total</i>		<i>Imported</i>	<i>Domestic</i>
	Kgs	Kgs	Kgs		Rs	Rs
B.A.T. Co. Mts. LTD...	417,320	51,420	468,740	10.9	—	—
A.T.C. Mts. LTD. ...	108,513	742	109,255	.7	—	—
TOTAL ...	525,833	52,162	577,995	9.0	—	—

<i>1966</i>				<i>% Total Imported</i>	<i>C.I.F. Value per kg.</i>	
	<i>Domestic</i>	<i>Imported</i>	<i>Total</i>		<i>Imported</i>	<i>Domestic</i>
	(Kgs)	(Kgs)	(Kgs)		(Rs)	(Rs)
Purchases ...	496,291	57,810	554,101	10.4	11.22	7.11
Usings ...	498,330	73,432	571,762	12.8	—	—

175. The percentage of imported leaf used in manufacture decreased by 3.8 per cent in 1967, compared with 1966, as illustrated in the following table:

	Year				
	1963	1964	1965	1966	1967
% Imported ...	20.8	22.8	17.2	12.8	9.0

176. These figures indicate that usings of domestic leaf increased compared with 1966. There was a decrease in usings of flue-cured Virginia and an increase in usings of air-cured Amarello.

177. The average C.I.F. value of imported Virginian leaf was Rs 10:53 per kg compared with Rs 7:73 per kg for domestic Virginian. The average value of air-cured Amarello was Rs 3:38 per kg.

178. Domestic Virginian blended with imported leaf is used in the manufacture of "State Express Filter King 555", "Matinée", "Vogue" and "Embassy" brands of cigarettes which sell in competition with imported Virginian cigarettes.

IMPORTS

179. Imports of leaf and cigarettes for the last two years are tabulated below:

	1966		1967	
	Kgs.	Value Rupees	Kgs.	Value Rupees
Cigarettes asterisk	11,163	233,166	13,247	282,680
Leaf :				
U.S.A. ...	57,552	647,676	17,994	206,517
Other countries ...	258	934	2,238	6,557
Total leaf ...	57,810	648,610	20,232	213,074
GRAND TOTAL ...	68,973	881,776	33,479	495,754

180. Usings of domestic leaf have increased by Kgs. 27,503 while usings of imported leaf have decreased by Kgs. 21,270, compared with 1966; a net increase of Kgs. 6,233. The increase in usings of domestic leaf was 5.5 per cent compared with a decrease of 28.9 per cent of imported leaf.

WAREHOUSE

181. The buildings were properly maintained.

182. A concrete building of about 2,840 sq. ft. has been constructed to house a "Kestner-Langler" vacuum fumigation plant and for storing fumigated tobacco before delivery to the manufacturers.

EXPORT

183. Further investigation in view of obtaining an export market for Virginian flue-cured tobacco in the United Kingdom and on the Continent have not been successful, owing to the high cost of production and the necessity of selling the run of the crop, that is, all the grades produced.

*Imported cigarettes used mainly as ships' stores.

XI. Fibre Industry

184. The total production of Mauritius Hemp continued to be sold by the Mauritius Hemp Producers' Syndicate to the Government Sack Factory for weaving into sacks to be used for the bagging of sugar and flour purchased from France and Australia. Comparative Statistics in connection with production were as follows:

		1966	1967
Number of factories operating	...	9	8
Fibre produced (metric tons)	...	1,552	1,602
Value (Rupees)	...	1,831,210	1,941,241
Area under aloe (arpents) :			
Wild	...	2,755	2,905
Plantation	...	257	373

SACK FACTORY

185. This organisation is controlled by a Board which publishes annually a full report on its activities.

186. The factory purchased fibre produced locally and imported jute cuttings to the extent:

		1966 kgs	1967 kgs
Aloe	...	1,552,154	1,602,000
Jute	...	201,571	302,510

The carry over from the previous year was:

Aloe	...	159,543	244,345
Jute	...	83,910	75,845

The factory consumed:

Aloe	...	1,467,152	1,248,043
Jute	...	209,701	271,205

The carry over for the year was:

Aloe	...	244,345	598,902
Jute	...	75,845	107,418

The prices paid for fibre were as follows:

		<i>Price per metric ton</i>	
		1966 Rs	1967 Rs
<i>Aloe fibre :—</i>			
Very Good	...	1,300	1,300
Good	...	1,250	1,250
Fair	...	1,225	1,225
Tow	...	1,000	1,000
Sisal	...	1,250	1,250
Cuttings	..	900	900
Ropes	...	900	900
<i>Jute :—</i>			
Cuttings	...	840	700

187. The average price payable for aloe fibre was Rs 1,212 per metric ton and this will be applicable until 31st December, 1969, in accordance with the tripartite agreement which has been extended for a further year by the Sugar Millers, the Mauritius Hemp Producers' Syndicate and the Government Sack Factory.

188. The average price for jute cuttings until almost the end of the year was Rs 810 per ton. However, a purchase was negotiated in December, 1967, for 108.725 tons at Rs 590 per ton.

189. The Factory's output compared with that for 1966 was as follows:

		1966	1967
		Units	Units
Sacks (6×8) Aloe	...	80,008	554
Sacks (5×7) Aloe/Jute	...	1,569,844	869,750
Sacks (10×10. $\frac{1}{3}$) Aloe/Jute	...	Nil	460,500
Other sacks	...	8,502	10,501
		1966	1967
		Yards	Yards
Filter press cloth	...	14,146	19,828
Other fabrics	...	2,008	4,841
		Kgs	Kgs
Yarn	...	19,694	16,630
Ropes	...	6,831	9,095

The Sugar Millers requirements of sacks for 1967 were:

		Units
(6×8) Aloe	...	205,172
(5×7) Aloe/Jute	...	507,250

190. During the year ended 31st December, 1967, 300,000 (10×10.1/3) Aloe/Jute sacks were exported to France.

191. During the year ended 31st December, 1967, the factory purchased 325,080 second hand sacks for reconditioning.

192. 180,000 reconditioned sacks were exported to Burma during the year and 122,154 were sold within the country and exported to Madagascar and Rodrigues.

193. The operation of the factory resulted in a net loss of Rs 196,198 for the year ended 31st December, 1967, compared with a net loss of Rs 186,466 for the year 1966.

194. The net loss for 1967 arises mainly from the sale of:

- (a) 205,172 (6×8) sacks at Rs 1.794 each compared with a cost of Rs 2.106
- (b) 507,250 (5×7) sacks at Rs 1.546 each compared with a cost of Rs 1.795
- (c) 300,000 (10×10.1/3) sacks at Rs 2.021 each compared with a cost of Rs 2.363.

195. The loss for the year would have been considerably larger but for the reconditioning of second hand sacks which produced a gross profit of Rs 166,737.

196. It is expected that under the present methods of purchasing aloe fibre the factory will sustain a further loss in 1968.

XII. Livestock

MILCH CATTLE

197. The two Livestock Breeding Stations at Curepipe and Palmar carried a total of 313 head of stock of the Creole Milch breed at the end of the year. The average production of lactating cows during the year were 5.14 kgs per head per diem. There were 67 calvings. 11 heifers calved at an average age of 42 months 18 days. The average weight of bull calves at birth was 33.6 kgs and that of heifer calves 31.6 kgs. Over a lactation period of 295 days, 13 first calvers yielded an average of 5.6 kg/day; best performer giving 9.8 kgs/day for 305 days, 22 second calvers yielded an average of 5.7 kgs over 286 days lactation and the best performer in this group yielded 8.7 kgs. of milk per diem over 305 days. 7 third calvers yielded 5.3 kgs. of milk per diem over 263 days of lactation, the best performer giving 7.8 kgs. of milk per diem over 305 days. 12 cows with more than 3 calvings gave 7.8 kgs of milk over 305 days and the best performer yielded 11.3 kgs. of milk per diem over 305 days.

HERD CATTLE

198. The Livestock Breeding Station of Palmar carried 236 head of cattle of all ages of Ongole and Boran breeds. There were 45 calvings and 1 abortion among them, of which 23 were female calves. Some of the Ongole females were crossed with a Boran bull and a few others were crossed with a Brahman bull. There were 16 calvings among the Boran X Ongoles (10 males and 6 females) and the average birth weights 25.2 kgs. and 26.5 kgs. for males and females respectively. 5 males and 10 females of this breed were weaned and their average weaning weight was 107.6 and 117.2 kgs. for males and females respectively. 14 calvings (6 males and 8 females) and 1 abortion (male) were recorded among the Brahman X Ongole with an average birth weight of 26.8 kgs. and 21.3 kgs. for males and females respectively. 20 animals of the same breed were weaned with an average weight of 111.3 kgs. and 108.7 kgs. for males and females respectively. Among the Borans 15 calvings were recorded (6 males and 9 females) with an average birth weight of 27.2 kgs. and 24.7 kgs. for males and females respectively. 19 weaners of that breed averaged 105.4 kgs. and 100.3 kgs. for males and females respectively. 4 old female Ongoles were sold for slaughter for the sum of Rs 510; 9 Brahman X Ongole bulls were sold for breeding for the sum of Rs 4,644.50 and 1 for draught purposes for the sum of Rs 540.75; 3 Boran bulls were sold for breeding for Rs 1,057 and 20 males were transferred to Rodrigues.

PIGS

199. The Piggery carried an average of 50 head of stock of all ages of the Large White Breed. There were 12 farrowings and on the average 8.0 piglets were born to each sow. Average weight at birth was 2.67 lb; the average number weaned per litter was 5.33 and the average weight at weaning was 31.68 lb. per head. 28 young boars and 27 young gilts were sold to breeders and one sow was discarded for slaughter. Further 1 Berkshire Boar was received from Rodrigues for breeding purposes.

GOATS

200. The herd of goats at Palmar Livestock Breeding Station included 99 Anglo Nubian, 33 Jumna Pari, 4 British Alpine and 10 Rodriguan goats. 18 Anglo Nubian goats kidded during the year, the average weight of the kid at birth being 3.70 kgs. 22 Anglo Nubian, 6 Jumna Pari and 3 British Alpine goats died during the year. During this period 3 young Anglo Nubian—2 bucks and 1 doe—were sold to breeders. The Jumna Pari goats continued to thrive. There were 9 kiddings, producing 8 males and 9 females, the average weight of the kids at birth was 4.220 kgs. for males and 5.25 kgs. for females. The average milk production was 0.509 kg per head per day, with a maximum of 1.5 kgs per head per day. With a view to improving the Rodriguan breed, Rodriguan goats were crossed with Anglo Nubians; 12 females and 6 males were born of 10 kiddings; the average weight at birth was 3.6 kgs. Likewise the Rodriguan goats were crossed with Jumna Pari; there were 6 kiddings producing 6 males and 5 females; the average weight at birth being 3.45 kgs. Also British Alpine were crossed with Anglo Nubian with the following results: there was 1 kidding, producing 2 females; the average weight at birth being 5.0 kgs.

SHEEP

201. Breeding of sheep was discontinued during last year.

RABBITS

202. The Rabbit Project has not been pursued during 1967 due to shortage of staff.

POULTRY BREEDING CENTRE

203. The centre maintained Parent Stock of "404", "707" Thornber's Hybrid strains and Parent Stock "4", Hybrid strain from F. & G. Sykes for the production of layers. In addition the Poultry Breeding Centre maintained Cobb's broiler Parent Stock as well as Parent Stock of Ledbreast Pilch for the production of broiler chicks.

204. During the year the Poultry Breeding Centre hatched 106,222 chicks as against 91,161 in 1966, an increase output of 16.5 per cent of the total production. 17,338 day-old pullets, 3,066 month-old pullets and 143 point of lay pullets for the production of eggs were sold to Poultry Keepers. To help production of Poultry Meat 62,179 broiler chicks were supplied to the two established commercial broiler producers and a few enthusiasts; and

in addition 20,636 day-old and month-old male chicks from laying stock were sold for the back yard production of poultry meat. 5,169 kgs of dressed chickens and culls were sold for the table. The Centre also provided 68 chicks to the Animal Health Laboratory for the testing of vaccines and 48 point of lay pullets to the Dependency of Rodrigues.

HYBRID—404

205. A total of 27,666 "hybrid—404" chicks were produced of which 11,163 day-old pullets, 2,288 month-old pullets and 13,761 day-old cockerels and 6-month old cockerels were sold to poultry keepers for egg and poultry meat production respectively.

HYBRID—707

206. A total of 6,344 "hybrid—707" chicks were produced, of which 5,296 day-old as hatched, 658 month-old pullets and 518 month-old cockerels were sold.

HYBRID—4

207. A total of 7,410 "hybrid—4" chicks were produced of which 7,054 day-old as hatched, 120 month-old pullets and 176 month-old cockerels were sold.

BROILER CHICKS

208. The production of broiler chicks was raised to 64,802 chicks during the year from 50,599 chicks in 1966. Of these 57,721 day-old chicks were supplied to the two broiler producers. 4,438 day-old and month-old chicks were sold to a few enthusiasts.

EGG PRODUCTION

209. 308,975 eggs were produced at the Poultry Breeding Centre. The monthly production of the various breeds maintained during the year was as follows:

Month	Breed								Total
	Parent Stock "404"	Parent Stock "707"	Parent Stock 4	Hybrid 4	Parent Stock Sykes	Parent Stock Cobbs	Parent Stock Lad Bycast Pitch	Parent Stock 7*	
January ...	5,996	3,749	2,431	4,113	977	13,633	5,703	—	36,602
February ...	10,131	2,777	2,385	3,606	742	11,225	4,166	—	35,032
March ...	10,741	1,978	2,578	3,570	312	8,935	281	—	30,925
April ...	9,720	1,563	2,235	3,278	7	5,338	3,103	—	25,244
May ...	7,636	2,558	1,914	3,236	1	3,809	6,241	—	25,395
June ...	6,862	2,433	1,801	2,938	—	2,346	5,179	—	21,559
July ...	7,134	1,450	2,226	2,879	—	4,061	3,383	—	21,133
August ...	6,404	1,243	2,582	2,943	—	4,802	5,581	—	23,555
September ...	6,874	1,160	2,549	2,811	—	3,028	7,841	—	24,263
October ...	4,163	1,085	2,387	2,711	—	4,341	9,586	—	24,273
November ...	—	1,198	2,040	2,062	—	4,103	13,081	—	22,484
December ...	—	—	74	789	—	7,186	10,417	44	18,510
TOTAL ...	75,861	21,194	25,202	34,936	2,039	72,807	77,092	44	308,975

*Birds came into lay in the month of December 1967

210. Of 308,975 eggs produced and 10,202 eggs carried forward from 1966, 119,314 eggs were sold for the table. 173,160 eggs were incubated for the supply to the public. 3,028 eggs were issued to the Animal Health Laboratory for vaccine production and 704 eggs to the Artificial Insemination Laboratory, for the preparation of semen for the field. The stock in hand at 31st December 1967 was 2,991 eggs.

REPRODUCTIVE PERFORMANCE

211. During the year under review 106,222 chicks were hatched. The average fertility and hatchability were 78.1 per cent and 63.2 per cent respectively of all eggs set.

212. The monthly reproductive performance of all breeders was as follows:

<i>Month 1967</i>	<i>Number of eggs set</i>	<i>Number fertile</i>	<i>Number chicks hatched</i>	<i>% fertility</i>	<i>% hatched of fertiles</i>	<i>% hatched of No. set</i>
January*	... 7,638	5,032	4,217	65.8	83.8	55.2
February	... 6,487	4,885	3,554	75.3	72.7	54.7
March	... 14,017	10,102	7,574	72.0	74.9	54.0
April..	... 11,046	7,254	5,672	65.6	78.2	51.3
May ...	... 17,648	14,062	10,894	80.2	77.4	61.7
June ...	... 15,231	12,501	10,462	82.1	83.6	68.6
July ...	... 17,396	13,977	12,693	80.2	90.8	72.0
August	... 13,763	11,572	9,546	84.0	82.4	69.3
September	... 15,367	13,019	9,916	84.7	76.2	64.5
October	... 18,779	15,314	11,770	81.5	76.8	62.6
November	... 15,867	13,087	10,750	82.4	82.1	67.7
December†	... 24,012	11,620	9,174	79.0	78.9	62.4
Total	... 177,251	132,425	106,222	78.1	80.2	63.2

213. The actual number of eggs set during the year 1967 is 177,251 eggs less 4,091 eggs (which were set in December 1966) but chicks came out in the year, i.e. 173,160 eggs.

*4091 eggs were set in December 1966 and chicks hatched in January, 1967.

†Percentage worked for December 1967 has been calculated on 14,697 eggs set, as the difference (9,315) was set in December 1967 and the chicks hatched in January, 1968.

214. The monthly performance of all Parent Stock, Breedwise was as follows:

Month 1967	"404" Parent Stock					"707" Parent Stock					Parent Stock 4			
	Number of eggs set	Number fertile	No. of chicks hatched	% fertility	% hatched	Number of eggs set	Number fertile	No. of chicks hatched	% fertility	% hatched	Number of eggs set	Number fertile	Number hatched	% fertility
April	2,911	1,408	1,192	48.3	84.6	665	390	263	58.6	67.4	558	441	290	79.1
May	8,144	6,226	5,209	76.4	83.6	1,311	992	727	75.6	73.2	1,914	1,569	1,149	81.9
June	5,501	4,703	4,122	85.4	87.6	1,830	1,531	1,252	83.6	81.7	1,264	923	701	73.0
July	6,591	5,803	4,895	88.0	84.3	2,284	1,859	1,597	81.3	85.9	1,722	1,329	1,051	77.1
August	4,739	4,079	3,449	86.0	84.5	928	628	483	67.6	76.9	1,799	1,352	1,037	75.1
September	4,762	4,140	3,284	86.9	79.3	734	447	349	60.8	78.0	2,028	1,563	1,073	77.0
October	6,184	5,409	4,325	87.4	79.9	1,349	859	704	63.6	81.9	2,313	1,621	988	70.0
November	1,671	1,488	1,190	89.0	79.9	879	660	552	75.0	83.6	1,405	1,074	683	76.4
December	—	—	—	—	—	808	549	417	67.9	76.0	1,265	745	438	58.8
TOTAL	40,503	33,256	27,666	82.1	83.2	10,788	7,915	6,344	73.3	80.2	14,268	10,617	7,410	74.4

Month 1967	Parent Stock Sykes Broiler					Parent Stock Cobbs Broiler					Parent Stock Ledbreast Pitch				
	Number of eggs set	Number fertile	Number of chicks hatched	% fertility	% hatched	Number of eggs set	Number fertile	Number of chicks hatched	% fertility	% hatched	Number of eggs set	Number fertile	Number hatched	% fertility	
January	842	565	401	67.1	70.9	1,830	907	601	49.5	66.2	4,966	4,135	3,215	83.3	
February	684	413	279	60.3	67.5	1,486	871	514	58.6	59.0	4,317	3,608	2,761	83.5	
March	630	303	200	48.0	65.9	9,348	6,502	5,016	69.5	77.1	4,039	3,297	2,756	71.5	
April	138	68	56	49.2	82.3	5,260	3,883	2,975	73.8	76.6	1,514	1,240	896	75.3	
May...	6	4	3	66.6	75.0	5,432	4,661	3,393	85.8	72.7	841	640	413	76.1	
June	—	—	—	—	—	3,239	2,735	2,184	84.4	79.8	3,397	2,609	2,203	76.8	
July...	—	—	—	—	—	2,189	1,683	1,659	76.8	98.5	4,610	4,025	3,491	87.3	
August	—	—	—	—	—	3,568	3,113	2,623	87.2	84.2	2,729	2,399	1,954	87.9	
September	—	—	—	—	—	3,720	3,165	2,455	85.8	77.5	4,123	3,704	2,755	89.8	
October	—	—	—	—	—	3,113	2,403	1,746	77.1	72.6	5,820	5,105	4,007	74.3	
November	—	—	—	—	—	3,629	2,599	2,190	71.6	84.2	8,283	7,265	6,135	87.7	
December	—	—	—	—	—	2,871	1,920	1,525	66.8	79.4	9,753	8,456	6,794	86.7	
TOTAL	2,300	1,353	939	58.8	69.4	44,685	34,442	26,881	77.1	78.0	54,392	46,383	36,982	85.3	

215. Although little improvement was recorded during the year in the overall fertility, there was a marked increase in the hatchability of fertiles and of all eggs set viz: 2.9 per cent and 2.7 per cent respectively. A review of the data compiled in respect of individual breeds/strains as given in annex B, shows that "404—Parent Stock" gave the best result of them all. However, it must be mentioned that the "Parent Stock 707" were on their second laying year.

IMPORT OF NEW STOCK

216. To meet the demand for layers, the Division of Veterinary Services imported 1,020 day-old "parent stock 7" pullets and 140 day-old "parent stock 7" cockerels; 418 day-old "parent stock 4" pullets and 44 day-old "parent stock 4" cockerels. These were supplied by F. & G. Sykes.

217. To meet the demand for broilers 1,126 day-old parent stock Led-breast pilch pullets and 165 day-old parent stock cockerels were ordered together with 735 day-old parent stock Cobb's pullets and 111 day-old parent stock Cobb's cockerels.

ARTIFICIAL INSEMINATION AND VETERINARY AID SERVICE

218. The policy of importing a high grade semen from Kenya was continued throughout the year. As in 1966, this Service was based upon voluntary requests from peasant farmers but the number of inseminations during the year did not increase beyond 148. Being conservative, the peasant farmers maintained their preference for Creole semen and the service with imported Freisian semen was very limited. A total of 14,232 calls for Artificial Insemination were received and 12,679 cows were inseminated during the year; 1,553 calls being in respect of animals found either too young or having passed the oestrus period. On the basis of first insemination, the overall average conception rate was 56.5 per cent which marked an improvement on the conception rate of 52 per cent recorded in 1966.

ARTIFICIAL INSEMINATION AND VETERINARY AID SERVICES

Total No. of Artificial Insemination (Milk Eggs and C.M.E.)	...	7,575
Total No. of Artificial Insemination (C.M.E.)	...	2,415
Total No. of Artificial Insemination (Milk and Eggs)	...	5,160
Total No. of Artificial Insemination (C.M.E.)	...	2,415
Total No. of 1st Re-insemination (C.M.E.)	...	1,189
% rate of conception (C.M.E.)	...	50.7%
Total No. of artificial insemination (Egg and Milk)	...	5,160
Total No. of 1st re-Insemination (Egg and Milk)	...	2,108
% rate of conception (Egg)	...	59.1%

ARTIFICIAL INSEMINATION AND VETERINARY AID RETURN FOR 1967

<i>Nature of cases</i>	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Artificial Insemination	...	519	665	631	614	704	707	670	658	719	620	498	7,575
1st Re-insemination	...	218	300	277	275	304	336	295	280	290	282	205	3,297
Other Re-insemination	...	85	122	142	157	200	185	198	174	149	143	116	1,807
Heat Over	...	120	122	120	117	138	128	133	122	140	151	127	1,553
Assessment for Pregnancy	...	209	612	257	150	165	157	193	179	138	294	181	2,715
Enucleation of Ovarian cysts	...	12	6	9	13	1	10	6	7	14	5	5	93
Calcium and Phosphorous deficiency	...	43	34	35	27	40	26	49	42	65	39	91	575
Udder troubles	...	38	46	56	58	45	32	27	25	23	25	32	438
Calving troubles	...	41	57	41	37	49	36	37	32	36	24	54	499
Digestive troubles	...	69	80	54	56	59	61	44	38	41	62	60	694
Miscellaneous	...	55	50	61	41	57	37	47	63	55	75	76	683
TOTAL	...	1,409	2,094	1,683	1,545	1,762	1,715	1,699	1,620	1,670	1,720	1,447	19,929
Average conception rate for 1967 + 56.5% (Including all inseminations made with egg diluent — Room temperature semen—Local Room temperature semen—imported)													
		60.5%	42.2%	58.3%	56.4%	50.5%	52.2%	58.2%	58.2%	56%	60.7%	62%	64%

RATE OF CONCEPTION OF INSEMINATIONS WITH IMPORTED FRESIAN
SEMEN (1967)

<i>District</i>	No. of A.I.		No. of 1st R.I.		No. Pregnant		No. of 1st R.I.		No. of 2nd R.I.		No. Pregnant		No. of 2nd R.I.		No. of 3rd R.I.		No. Pregnant		No. of 3rd R.I.		No. of 4th R.I.		No. Pregnant	
Palmar and Curepipe	40	33			7		32	24			8		23	15			8		10	9			1	
Livestock Breeding Stations					17.5%						25. %						34.8%						10. %	
Plaines Wilhems and Black River	16	13	3				6	4	2				6	5	1				3	2			1	
					18.8%						33.3%						16.7%						33.3%	
Savanne ...	...	9	6	3			4	2	2				1	—	1				—	—			—	
					33.3%						50 %						100 %							
Port Louis and Pamplemousses	8	5	3				1	0	1				—	—	—				1	—			1	
					37.5%						100 %												100 %	
Flacq ...	...	12	10	2			7	4	3				2	1	1				1	1			—	
					16.7%						42.9%						50 %						0 %	
Moka ...	...	22	13	9			8	6	2				7	5	2				4	2			2	
					40.9%						25 %						28.6%						50 %	
Rivière du Rempart ...	...	13	7	6			3	2	1				2	1	1				1	1			0	
					46.2%						33.3%						50 %						0 %	
Grand Port	...	28	21	7			11	6	5				3	1	2				1	1			0	
					25 %						45.5%						66.7%						0 %	
AVERAGE	...	148	108	40			72	48	24				44	28	16				21	16			5	
					27 %						33.3%						36.4%						23.8%	

64 cases of pregnancy (A.E. & 1st R.I.) on 148 A.I.=43.2%

80 cases of pregnancy (A.I., 1st R.I. & 2nd R.I.) on 148 A.I.=54%

219. The trials with coconut milk extender (Room Temperature Semen) were maintained but in the absence of the necessary equipment, which was received towards the end of the year as a donation from Oxfam, the conception rate did not consequently improve over the previous year, viz 50 per cent.

220. In the absence of this equipment the egg yolk and milk diluents were used which gave more satisfactory results and the conception rate using the diluents was 59.1 per cent on first insemination.

221. In addition, 5,697 cases requiring veterinary aid were attended by the Field Staff, showing an improvement in the general health of cattle in the Island over the previous year. 93 cases of infertility due to ovarian cysts were treated and these were successfully enucleated and all the animals responded to re-insemination. The nature of the cases attended were mainly calcium and phosphorous deficiencies, mastitis, retained placenta, dystokia and digestive disorders. As compared to 1966, there was an increase of 134 cases of calcium and phosphorous deficiencies.

XIII. Animal Health

222. The health of the stock at various Government Livestock Breeding Stations continued to be satisfactory, thus maintaining optimum conditions for the successful implementation of the production programme.

223. The animal health picture of the Island continued to be unique and no new exotic animal diseases were recorded except streptothricosis, already known to exist and recorded in 1965. Unfortunately, no vaccine nor any specific treatment has yet been found against this disease. No deaths were recorded to piroplasmosis.

CATTLE

224. Summer mastitis amongst milch cattle at the Government Livestock Breeding Stations continued to remain under control and no fresh case was recorded during the year. Save minor udder troubles, no major mastitis cases were recorded in the field.

PIGS AND GOATS

225. The pig unit at Curepipe Livestock Breeding Station continued to thrive during the year though there was high mortality among piglets due to diarrhoea, septicaemia and *E. coli* infection. As regards the goat units at the Livestock Breeding Station, Palmar, and at the Headquarters at Reduit, the Jumna Paris did very well. The Anglo Nubian units also thrived along with a unit of Rodriguan goats imported for cross breeding with the above 2 breeds. Mortality amongst kids was due mainly to Coccidiosis.

POULTRY

226. The Poultry Breeding Centre carried an average of 13,201 birds of all ages on a monthly basis and throughout the year, production was stepped up by 16.5 per cent over the previous year, viz. 91,161 chicks in 1966 compared to 106,222 chicks in the year under report.

227. The mortality in the adult stock during the year was 8.25 per cent.

The overall analysis of mortality was as follows:

	1967	1966
	<i>per cent</i>	<i>per cent</i>
C.R.D.	1.47	1.17
Newcastle	.08	
Leucosis	11.18	12.70
Encephalomyelitis	0.14	1.69
Lung congestion (Respiratory)	14.43	25.30
Avitaminosis, rickets etc.	8.22	8.38
Coccidiosis	4.76	1.93
Unabsorbed yolk, parasitism etc. ... }	59.72	48.83
Peritonitis, cannibalism, etc ... }		

228. 37 post mortem examinations were carried out by the Animal Health Laboratory during the year under report; and the main diseases detected were: Caecal coccidiosis, Gastritis and Enteritis.

229. A total of 2,238 postmortem examinations were carried out on large and small animals and on poultry and other birds. In addition 37 milk samples were subjected to bacterial examinations, 117 blood samples were examined in respect of the protozoan diseases, 59 faecal examinations were carried out and 696 cultures prepared.

THE ACCOMPANYING TABLE SHOWS THE PERCENTAGE OF INCIDENCE OF DISEASES

<i>Species</i>	<i>Diseases</i>	<i>Poultry Breeding Centre</i> <i>1,243 cases</i>	<i>Public</i> <i>741 cases</i>
		<i>%</i>	<i>%</i>
Poultry ...	Respiratory disease ...	20.4	12.5
	C.R.D. ...	2.09	1.3
	Leucosis Complex ...	14.1	5.4
	Avitaminosis and Rickets	7.24	7.83
	Newcastle Diseases ...	—	1.9
	Coccidiosis ...	4.81	15.7
	Unabsorbed yolk ...	27.6	33.5
	Worms infestation ...	1.35	5.1
		<i>Government Centres</i> <i>48 cases</i>	<i>Public</i> <i>21 cases</i>
Rabbit ...	Coccidiosis ...	37.5	85.7
Goat ...	Oestrus Ovis parasitism ...	—	13 cases 53.8
Cattle ...	The herd cattle on two estates in the southern part of the Island suffered from severe anaemia associated with Anaplasmosis. The blood values were very low. Figures of 11 and 16 mm for the packed cells volumes (Wintrobe method) 5.0 and 5.6 gms per cent haemoglobin and 1.7 and 3.1 millions red blood corpuscles were recorded.		

During the year the work of the Animal Health Laboratory was concerned with (a) General diagnosis (b) Disease surveys and (c) Vaccine production.

VACCINE PRODUCTION

230. Manufacture of vaccines was restricted to (a) Newcastle Disease Inactivated Vaccine (b) Fowl Pox Vaccine. The following represent the number of doses of each of the vaccines produced:

	<i>doses</i>
Newcastle Disease (Inactivated Vaccine) ...	192,000
Fowl Pox Vaccine ...	140,000

VACCINATION CAMPAIGN

231. As in 1966, five trained and fully equipped vaccinators continued to be posted in the districts to provide vaccination facilities at the doorsteps of large and small poultry keepers alike. 96,879 doses of Newcastle live and dead vaccine as well as Fowl Pox vaccine were used. The breeders were very keen in getting their stock vaccinated and this helped to maintain control over the two diseases. The vaccinators in addition, continued to give the poultry farmers simple advice on management and hygiene.

232. In addition 92,245 doses of Newcastle vaccine (dead) and 90,740 doses of Fowl Pox vaccine were sold direct to poultry keepers wishing to do their own vaccination.

VACCINATION REPORT FOR THE YEAR 1967

Vaccinator	District	No. of Vaccine Newcastle (live)					Newcastle (dead) and Fowl pox					Total		
		Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.		Nov.	Dec.
Mosaheb ...	Plaines Wilhems, Black River Port Louis and Pamplémousses	1,212	1,209	1,392	1,164	903	714	979	893	1,660	2,100	687	2,569	15,482
Seomore ...	Plaines Wilhems, Black River Moka, Port Louis and Pamplémousses	2,640	1,453	1,378	829	797	1,158	1,433	1,595	1,842	2,147	2,331	1,774	19,377
Bhatoolall ...	Pamplémousses and Rempart ...	1,823	1,848	1,446	903	1,166	862	1,719	1,994	2,468	2,988	2,757	1,670	21,644
Jodhun ...	Flacq and Quartier Militaire ...	2,790	1,567	1,190	1,161	918	954	1,817	2,286	2,818	3,346	2,558	1,481	22,886
Doomun ...	Grand Port, Savanne and Plaines Wilhems	1,644	1,901	1,183	726	1,052	1,185	842	1,221	1,391	2,186	1,586	1,547	16,446
TOTAL ...		10,109	7,978	6,589	4,783	4,836	4,873	6,790	7,989	10,179	12,767	9,901	9,041	95,835

Part time vaccination done by Livestock Assistant Boodajee :
 as from September 28th ... 201 live Newcastle vaccine
 to October 13th ... 817 do do
 29th November ... 26 do do

GRAND TOTAL : 95,835
 1,044
 96,879

TUBERCULIN TESTING

233. Owing to the change in the Import Permit of live cattle from Madagascar, which resulted in tuberculin tests to be carried out in Mauritius, 4,187 head of cattle from Madagascar were tested. 125 animals reacted to the test which represented a percentage of 2.98. These animals were slaughtered at Roche Bois Slaughter House only. Further 859 Zebu herd cattle and 96 milch cattle were tested. There were 17 (1.9 per cent) positive reactors among the Zebu cattle; 3 (.12 per cent) among the milch cattle. All reactors were disposed of through slaughter.

ANIMAL QUARANTINE SERVICE

234. To prevent the introduction of infectious/contagious diseases into Mauritius, the Provisions of the Animal Disease Ordinance were rigidly applied to all imports of livestock and livestock products. The Quarantine kennels, the cattery and the Poultry Quarantine Unit at Reduit and the Animal Quarantine Station at Roche Bois (near Port Louis) were maintained. To ensure against the introduction of any diseases through the importation of live goats from Madagascar, the slaughter of these goats was restricted to the slaughter house at Roche Bois which is under the control of a fully qualified Veterinary Surgeon. Likewise cattle from Madagascar were slaughtered at Slaughter Houses at Roche Bois, Rose Hill and Curepipe.

LIVESTOCK

235. Under the provision of the Animal Diseases Ordinance, 77 ships and 19 aircraft carrying livestock were cleared by the staff of the Veterinary Services and all livestock whether for slaughter or breeding purposes was subjected to quarantine at the Quarantine Stations. During the year the following stock was received at the Quarantine Stations as compared to 1966:

Country of Origin	Bullocks		Sheep		Goats	
	1966	1967	1966	1967	1966	1967
Madagascar	...	8,935	12,540	—	2,176	4,180
Rodrigues	...	402	290	1,539	3,097	2,926
Australia	...	—	—	2,799	528	495

IMPORT OF LIVESTOCK—YEAR 1967

Item	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Cattle	... 1,043	—	1,788	1,111	888	758	1,067	1,148	1,241	862	1,208	1,803	12,837
Sheep	... 202	79	397	320	192	209	179	589	479	327	471	572	4,016
Goats	... 344	49	1,137	1,872	547	595	351	734	862	314	784	1,032	4,016
Pigs	... 201	—	424	450	508	315	—	636	766	2	965	932	5,199
Fowls	... 3,672	—	6,876	6,456	5,508	2,052	—	7,740	6,120	240	6,048	7,272	51,984
Day-old chicks	—	—	575	—	—	805	2,032	5,360	4,600	6,930	2,655	—	22,957
Horses	... —	—	—	—	—	5	7	—	—	—	—	—	12
Dogs	... —	—	9	7	1	1	—	5	7	3	7	10	50
Cats	... —	—	—	—	—	—	—	2	—	—	—	—	2
Cage Birds	... 8	—	56	10	—	—	—	—	10	—	—	—	84
Donkeys	... —	—	—	—	1	—	—	—	1	—	—	—	2

236. In addition 3 Freisian bulls, one Freisian bull calf imported from the United Kingdom and one Sahiwal bull imported from India, for breeding purposes, were held under quarantine at Roche Bois Quarantine Station. These were subsequently sent to Reduit Artificial Insemination Centre. 2 Heifers in calf, imported from Australia, 2 donkeys from Rodrigues and 74 cage birds from different countries were held in quarantine prior to release to importers.

237. At Reduit, 5 dogs and 2 cats imported from the United Kingdom and the U.S.A. were held in quarantine for a period of 6 months from the date of arrival. Further 10 dogs belonging to the Great Royal Circus of India which came to Mauritius on 9.11.67 were held in quarantine till the circus left Mauritius on 29.2.68. 3,635 day-old chicks received from the United Kingdom underwent quarantine at the Poultry Quarantine Unit at Reduit prior to release to the Poultry Breeding Centre. Also 17,472 and 1,850 day-old chicks imported from South Africa by Messrs. Mayfair and Food & Allied Industry respectively, were sent to quarantine at their respective premises.

LIVESTOCK PRODUCTS

238. During the year 1,442 import permits and 641 landing premits were issued. All frozen meat landed was subject to veterinary inspection prior to release for sale. The following table summarises the import of livestock products including frozen meats, offals, by-products of abattoirs and prepared livestock feeds, compared with 1966:

	1966					1967
Frozen beef and beef products	...	...	...	1,249,261 $\frac{3}{4}$	lbs	826,639 $\frac{3}{4}$ lbs
Frozen mutton and offals	...	...	...	1,289,178	lbs	1,523,378 $\frac{3}{4}$ lbs
Frozen goat meat and offals	...	...	...	53,252	lbs	24,966 lbs
Frozen pork and pork products	...	...	...	234,916,7/16	lbs	265,967 $\frac{1}{4}$ lbs
Frozen poultry	...	...	...	492,554 $\frac{3}{4}$	lbs	418,615 $\frac{3}{4}$ lbs
Eggs	...	...	...	26,085	dozen	Nil
Frozen turkeys, ducks & geese	...	...	...	8,029	lbs	8,274 lbs
Frozen rabbits	...	...	...	60	lbs	Nil
Livestock feeds (Poultry, pigs, cattle rabbit and horse)	...	...	...	11,092,254	lbs	18,328,646 lbs
Fish meal for livestock feed	...	...	...	743,872	lbs	228,480 lbs
Bone meal for livestock feeds	...	...	...	89,600	lbs	67,379 lbs
Lucerne	...	...	...	Nil		Nil

IMPORT OF LIVESTOCK PRODUCTS—YEAR 1967

(Weight in Lb)

Item	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Beef & Beef Preps	{ Frozen ...	62,829½	33,429½	72,930	24,969½	56,500½	5,118½	23,027½	54,057½	30,203	33,274	85,279	516,763½
	{ Salted ...	2,128	1,000	1,000	2,238	1,000	2,128	2,600	800	4,960	6,644	2,016	26,534
	{ Offals ...	12,305	25,846	22,331	40,525	20,535	15,938	32,311	26,899	10,340	19,425	20,389	269,984
	{ Sausages	10	2,277	1,000	1,100	1,508	1,000	750	3,750	1,000	—	—	12,912
Goat	{ Preps : ...	—	—	79½	—	—	—	367	—	—	—	—	446½
	{ Meat ...	1,133	—	—	1,120	—	—	6,720	1,101	2,239	1,875	8,951	23,139
Mutton	{ Offals ...	—	—	—	—	—	—	—	—	—	—	1,827	1,827
	{ Frozen ..	92,075½	42,962½	61,553	94,537½	113,532½	147,684½	103,929	94,015½	151,786½	190,492½	295,681	1,486,649½
Pork & Pork Prep :	{ Offals ...	—	—	—	7,851	—	1,920	2,920	1,249½	5,813	4,791	11,105	36,729½
	{ Frozen ...	—	291	300	—	4,596	400	2,553	400	501	247½	—	9,288½
	{ Offals ...	—	—	—	—	—	—	—	—	196	112	—	308
	{ Pickled ...	—	2,128	7,952	4,816	—	4,256	6,720	10,416	7,952	4,256	—	48,496
Poultry Frozen	{ Bacon ...	3,475	4,720	2,520	10,153	6,326	6,443	7,792	2,874	13,333	8,017	6,832	84,209
	{ Ham ...	—	1,086	1,143	173	40	755	—	635	651½	16,197	4,891	25,975½
	{ Sausages	2,120	1,570	5,540	9,353½	8,345	4,679	9,045	6,200½	14,375½	2,562½	14,038	82,088
	{ Preps : ...	200	224	1,979	1,158½	1,075½	1,293	553	—	2,335	4,725	406	14,603
Cattle Feed	{ Fowls ...	7,660	—	—	75,722	99,523½	30,622	10,085	24,577	57,186½	28,431	110,052	418,615½
	{ Turkeys	—	—	—	—	—	—	—	—	—	3,769	4,505	8,274
Poultry Feed	...	40,200	20,100	—	—	21,300	—	—	—	21,000	—	—	102,600
Pig Feed	...	1,826,080	1,867,980	846,972	1,404,450	855,000	1,688,800	915,750	951,750	2,966,000	1,575,000	1,652,850	18,072,232
Bone Meal	...	10,000	—	30,000	34,500	11,500	14,600	4,500	—	—	—	15,000	120,100
Fish Meal	...	—	—	—	—	—	—	—	11,379	—	—	56,000	67,379
Horse Feed	...	112,000	112,000	—	—	—	—	4,480	—	—	—	—	228,480
Rabbit Feed	...	—	—	—	—	—	—	10,050	—	—	—	10,500	30,714
	...	—	—	—	—	—	—	3,000	—	—	—	—	3,000

239. During the year 1,605 calves, 677 cows inclusive of 125 slaughtered on humane ground and 2,023 bulls of the milch breed were slaughtered, producing 860,948 lbs of beef. In addition, 291 herd cattle and 263 bullocks imported from Rodrigues were slaughtered yielding 160,598 lb of beef. 11,873 bullocks imported from Madagascar were slaughtered and produced 3,828,351 lb of beef.

240. Likewise 30,014 lbs mutton and 295,798 lbs goat meat were produced in Mauritius and another 271,796 lb from 6,774 imported goats and sheep giving a total of 597,608 lb. 1,129,098 lb pork were produced in the Colony including pigs imported from Rodrigues. In these figures offals and preparation are not included.

241. The slaughter house returns revealed the following average weight of imported and local cattle slaughtered during the year:

			lb
Local herd cattle ...	...	...	299.8
Local milch cow ...	...	...	251.8
Local bulls of milch breed ...	...	...	193.6
Calves of local milch breed ...	...	...	186.2
Rodrigues cattle ...	...	...	278.9
Madagascar cattle ...	...	...	322.2

242. The slaughter of unproductive females of the local milch breed were authorised on 5 week-ends. During the year 129 permits were issued for wedding and religious ceremonies. Five butchers were licensed to sell beef in meat shops licensed by the Ministry of Health.

SLAUGHTER HOUSE CONTROL

243. Under the Food Control Order 552 permits were issued for slaughter of unproductive cows of the milch breed as against 1,085 in 1966. In addition 125 animals of the milch breed were allowed slaughter on humane ground.

244. During the year meat obtained from 25 cases of illegal slaughter of female of the milch breed was examined and certificates issued to the Police Department.

245. Meat of animals burnt in fire and involved in road accidents was also examined and certificates issued to the Police Force.

246. From the Meat Inspection returns, 19 total and 514 partial seizures on account of bovine tuberculosis were reported among the Madagascar bullocks slaughtered at Roche Bois, Rose Hill and Curepipe Slaughter Houses, giving 4.5 per cent of T.B. cases among a total of 11,873 heads slaughtered during the year.

247. In respect of the local stock of Zebu and milch animals, 7 seizures on account of bovine tuberculosis were reported giving 0.15 per cent of T.B. cases among the total of 4,596 head slaughtered during the year.

SUMMARY OF SLAUGHTER HOUSES MEAT INSPECTION RETURN FOR THE YEAR 1967

(Weight in Kgs)

Description of animals	Roche Bois		Rose Hill		Curepipe		Pascal		Mahebourg		Total	
	No. Sldd.	Weight	No. Sldd.	Weight	No. Sldd.	Weight	No. Sldd.	Weight	No. Sldd.	Weight	No. Sldd.	Weight
LOCAL CATTLE												
(a) Milch breed												
1. Calves ...	148	12,351	988	91,851	464	44,983	5	236	—	—	1,605	149,421
2. Bulls ...	530	58,837	66	9,959	14	3,587	988	86,888	425	36,648	2,023	195,919
3. Cows ...	179	19,470	173	22,766	112	15,037	127	16,307	86	11,654	677	85,234
(b) Herd Cattle	49	9,500	50	5,683	182	26,243	8	1,788	2	408	291	43,622
IMPORTED CATTLE												
1. Rodrigues	129	17,621	85	11,793	49	7,263	—	—	—	—	263	36,677
2. Madagascar	6,852	1,111,735	2,864	461,025½	2,157	341,415	—	—	—	—	11,873	1,914,175½
SHEEP												
1. Imported	1,785	—	258	6,602	32	1,095	—	—	—	—	2,075	—
2. Local ...	901	—	125	3,189	7	105	—	—	—	—	1,033	—
GOATS												
1. Imported	4,456	—	239	3,302	4	79	—	—	—	—	4,699	—
2. Local ...	12,463	—	1,096	18,232	75	1,107	18	113	397	3,817	14,049	—
PIGS												
1. Imported	—	—	—	—	—	—	—	—	—	—	—	—
2. Local ...	7,073	490,733	450	31,034	1,032	35,181	46	1,004	262	6,597	8,863	564,549

ADVISORY SERVICE

248. Professional Officers continued to visit large and small livestock breeders for on-the-spot advice and in addition lectures were delivered to Young Farmers and Members of the Freedom From Hunger Campaign Clubs.

VISITORS

249. Mr. John M. Rogers, Managing Director of Bowyer (Wiltshire) Ltd., U.K., visited Mauritius in January, to study and discuss with interested local parties the feasibility of his Firm assisting in the establishment of a Ham and Bacon Factory in Mauritius. The Division was in addition visited by an Attaché of the Israel Embassy in Tananarive, to study livestock and produce imports and by Mr. A. Gille, Director, Unesco Office, Nairobi.

STAFF

250. It is with a deep regret that the sudden demise of Mr. B. Seetaram, Livestock Assistant, is recorded.

251. Mr. R. Persand, Livestock Assistant in the Grand Port area, proceeded on leave prior to retirement.

252. Mr. H. Owadally was posted as Temporary Stock Inspector during the year.

STATEMENT OF REVENUE FOR THE YEAR 1967

253. The various services rendered to the public produced revenue of Rs 346,431.20 compared with Rs 373,664.96 in 1966, the main sources of which were:

			Rs	c
Sale of livestock, other than poultry	...		28,290.	76
Sale of poultry, chicks, eggs, etc.	...		185,119.	68
Sale of vaccines and drugs	...	...	14,202.	98
Quarantine fees	...	...	100,568.	83
Veterinary fees	...	...	17,895.	45
Miscellaneous	...	...	353.	50
			346,431.	20

XIV. Land Settlement

254. In 1967 the Land Settlement Committee held no meeting. However, the Special Committee set up by the Ministry to select tenants for the lease of lands for agricultural purposes held 2 meetings and dealt with the selection of tenants for Crown Land La Malmaison, Crown Land Pavillon, Crown Land Anse Jonchée, Crown Land Pointe du Diable and Crown Land Mont Choisy. There were also some cases of transfer of tenancies during the year.

255. The Crown Lands at Elysée and at Moona which were formerly under the Allotment Scheme were passed under the Land Settlement Scheme with new conditions of lease.

256. As usual, Officers of the Extension Service gave advice to the tenants and in general the holdings were in a satisfactory state of cultivation. Climatic conditions were favourable during the year and good crop yields were obtained. However the lack of a full time Land Settlement Officer is providing a serious drawback on the supervision of the settlements.

257. As was the case in the previous year, rent collection has been very unsatisfactory with a steady accumulation of arrears for tenants. Legal action has been taken against them.

258. At Terre Rouge, roads and irrigation canals were maintained. An additional eleven arpents is being prepared for release to cultivators.

259. The tenants of Vale, La Cave and Belle Vue are cultivating their holdings satisfactorily.

260. The holdings at Palmar, where sugarcane and miscellaneous foodcrops are grown were cultivated satisfactorily. A favourable season has helped to produce high yields of onion. Tomato planters again suffered from falling prices in the middle of the year.

261. Repairs of roads are proceeding steadily at Bee Manique. Some bridges are damaged and will have to be repaired. A few holdings have been left in an abandoned state.

262. Foodcrops and vegetables continued to be produced on a large scale at Plaisance. There were, however, some holdings which were left in an abandoned state.

XV. Extension Services

VISITS TO PLANTATIONS

263. Over 9,000 visits were paid to sugarcane and vegetable growers, advice covering all aspects of the various crops grown was given, with special emphasis on the rational use of complete fertilisers for crops and the timely control of pests and diseases of economic importance to foodcrops. Advice was tendered on the correct use of the wide range of chemicals on the market for the control of pests and diseases. The importance of the choice of sugarcane variety in relation to regions and the planting of disease-free material was stressed as was the need for crop rotation in foodcrop production in relation to pest and disease control and the use of healthy planting material of proven varieties.

DEMONSTRATION WORK

264. There was a great increase in the number of demonstrations, particularly of fertilisers on sugarcane and foodcrops. 60 fertiliser demonstrations were laid down of which 31 were on sugarcane and the rest on potato, onion and groundnut. Most of these demonstrations showed marked differences in favour of the use of complete fertilisers. 157 demonstrations on the use of pesticides, for the control of insect pests and diseases were carried out. Field visits were organised to allow planters to derive maximum benefit from these demonstrations.

265. 150 meetings of small planters were convened throughout the year, 42 for the benefit of sugarcane small farmers. Problems of agricultural interest were discussed. The main subjects which were reviewed were:

- (a) The use of complete fertilisers on sugarcane and foodcrops, the timing and method of application and the use of compound fertilisers in relation to particular crops.
- (b) Land preparation, right choice of varieties and planting material and proper time for harvest.
- (c) The control of pests and diseases and the right choice of insecticides and fungicides and the precautions needed in the use of pesticides in general
- (d) The incidence of the virulent strain of gummosis, eradication of the very susceptible varieties M. 147/44, B. 3337 and B. 34104 and their replacement by resistant varieties.
- (e) The use of healthy planting material.
- (f) Better utilisation of available land and soil conservation measures.

266. Extensive use of visual aids such as wall charts, slides, live specimens, films and leaflets was made at these lectures.

267. In a drive to reach more planters with the limited field staff available, contacts with planters were multiplied through more intensive group work.

268. Regional Extension Committees were set up on a trial basis in five localities with the object of attracting more active participation of planters in the working out of the Extension programme, thereby making Extension work more useful for them and more efficient for the Extension officers. Programmes of lectures, conducted tours, group meetings, film shows and of the "Produce More Food Campaign" were all discussed and arranged through the local Committees. Some 30 lectures and group discussions were held, 10 conducted tours were organised, some 250 fruit trees delivered through these Committees. The results have been very encouraging. More interest has been stimulated in farming matters, extension work has been better programmed and implemented and a better recognition of the role of the Extension Service was achieved.

PROPAGATION AND DISTRIBUTION OF CANE VARIETIES

269. The drive to eradicate varieties of sugarcane susceptible to gummosis has been maintained and new varieties are being planted gradually in replacement of these varieties. Some 20,500 canes of the variety M. 442./51 were sold to planters from the Demonstration Centres. Demands for that variety and other more recently released varieties like M. 13/53 and M. 13/56 have been met largely by the Sugar Planter's Rehabilitation Fund Nursery at Pointe aux Sables and by the B. Nurseries on sugar estates. Planting material of the promising variety M. 377/56 has been secured and is being propagated by the rapid multiplication method on some Demonstration Centres for release ultimately to planters.

PESTS AND DISEASES

270. The persistent wet season presented a constant danger of high incidences of Late Blight and Bacterial Wilt in potato plantations. Owing largely to precautionary measures by the very extensive use of preventive spraying of fungicides, the level of attack was comparably low and many potato planters achieved relatively blight free crops. Attacks of Bacterial Wilt were on the increase. The incidence of worms of the tuber moth borer particularly was very high in the hotter end of the second potato season. Attacks were most virulent on fields planted late. The heavy incidence of tuber moth borers being a yearly recurring feature, routine preventive sprayings starting early in the growth of the crop is recommended.

271. The following insect pests were of common occurrence in fields: tomato borers, fruit flies, thrips, aphids, and red spiders. There were several attacks of climbing cutworms on potato fields in the North during the first potato season. Good control was achieved by spraying D.D.T. and Orthodibrom. The attack of fruit flies on fruits like litchi, peaches, loquats and other fruits continues to be a problem of major economic importance.

272. There was the usual occurrence of thrips on onion which was however kept under control by insecticide sprays and with a favourable season, good yields were obtained. High incidence of Pink Root Rot, a little known disease, has been found affecting most onion fields and that disease is suspected to be seriously affecting yields. An unidentified disease has been found causing spots on the leaves of ginger plants.

273. The new strain of gummosis, that was first reported in 1964, did not affect sugarcane as much as was anticipated. Climatic conditions were favourable for the growth of the sugarcane and susceptible varieties showed only mild symptoms of the disease on foliage.

274. The preliminary survey in connection with the gummosis eradication scheme was completed during the year. Data collected gave very valuable information on the incidence of the disease, its distribution and degree of infection, the acreage and the varieties affected. The data gained with the survey also yielded very valuable information on the varietal trend among small cane growers and the distribution of varieties according to rainfall.

275. The sugarcane varieties M. 147/44 and M. 202/46 are both susceptible to the new strain of Leaf Scald that was reported in 1964. The recommended treatment is roguing of stools. Wilt on sugarcane which was first reported in 1965 was found to have affected a few varieties in the humid and superhumid regions. Although attacks may be severe, outbreaks have only been localised and the disease does not pose yet any economic problem.

FOODCROP GROWING IN CANE INTERROWS

276. The year saw an increased intensification of foodcrops growing in the interlines of sugarcane with the sugar estates and large planters participating on a bigger scale. Large acreages were planted to beans and maize.

Potato and tomato were planted on a big scale in virgin cane interlines in the North particularly. Garlic was planted by sugar estates on a trial basis. Ratoon interlines were cultivated to a fair extent with encouraging results with crops like potatoes, cabbage and beans in the wetter localities.

277. A new feature has been the start of exploitation of the intercropping possibilities in the interlines of ratoon canes with sunflower. Large scale plantings were carried out in anticipation of erection of the proposed oil expelling factory and the oil refinery. Valuable data have been obtained relating to the cost of production and yields of that crop. The precarious position of sugar on the world market constitutes a driving force towards more intensification of crop production and a notable feature is the earnestness with which many planters are envisaging better exploitation of not only virgin sugarcane interlines but also of ratoon sugarcane interlines.

PERMANENT DISTRICT DEMONSTRATION PLOTS

278. A substantial acreage of the demonstration plots was devoted to the cultivation of bananas, pineapple, manioc, sweet potatoes and fodder grasses to meet the demands of planters for planting material. A fair amount of the cane variety M. 442/51 was sold to planters. Comparative demonstrations were laid down on the more important commercial crops and features of note were the fertilizer and varietal demonstrations.

279. Varietal demonstrations were conducted, among others on varieties of potato, hybrid maize, groundnut, onion, sweet potatoes etc. Varietal demonstrations were put up with the potato varieties available in the first potato and second potato season respectively. The red Creole onion variety was tested against the Red Local variety. The interlines of the sugarcane plots were planted to sunflower after the harvest of the canes. Small plots of rice were planted for observation on all the Demonstration Centres.

280. The production of plants of the more current fruit trees is now a well established feature of work on the Demonstration Centres and considerable amounts have been produced and sold to the public in the drive along the campaign of "Produce More Food".

281. Better accommodations are now available for the multiplication and turn out of Anglo Nubian goats for sale to goat breeders for the upgrading of their stock. There has been a considerable production of chicks from the incubators installed on two Demonstration Centres.

282. There are now two silo pits on most of the Demonstration Centres. The quality of the silage produced has been generally good but unfortunately livestock breeders are not interested in that kind of animal feed.

283. A novel feature this year has been the conducted tours of demonstration centres organised for the benefit of planters. Much interest has been shown by planters and it is hoped that such tours will induce a greater number of them to visit these centres.

ARSENAL DEMONSTRATION CENTRE

284. 3,500 kgs of foodstuffs were produced. 9,025 canes of the variety M.442/51 were sold to planters as planting material. Vegetable and fruit trees were also on sale. One silo pit was opened in July but the silage was spoilt because of the heavy rains. The livestock sheds were being dismantled and replaced by a concrete unit for housing the cow, the poultry and the goats.

MAPOU DEMONSTRATION CENTRE

285. 1,520 kgs of foodstuffs were produced. 168 fruit trees were raised and sale from the station has amounted to 143. Milk production has amounted to 1,358 litres and eggs to 3,734 units. One she-goat calved two kids. The silo pit was refilled in November. Planting material of bananas, manioc, and sweet potatoes were supplied free of charge to the public. The dryness of the region hampered crop production considerably.

VACOAS DEMONSTRATION CENTRE

286. Vegetable production was carried out intensively. 9,526 kgs of vegetables were produced and sales amounted to Rs 2,342.23. Specialisation in market garden crops is the feature of the Demonstration Centre with crops like cabbage, cauliflower, petsai, lettuce, squash, beans, etc.

RIVIÈRE DES ANGUILES DEMONSTRATION CENTRE

287. Foodstuffs totalling 3,266 kgs were produced and sold. Some 400 fruit plants were produced on the station out of which 300 were sold. 118 chicks were hatched and sold to breeders and 3,629 eggs produced. Planting material of pineapple, banana, sweet potatoes and of manioc were in considerable demand and were supplied to planters. Two silo pits were opened but although the material was of good quality, it was not of much demand owing to a plentiful amount of green fodder. A survey spread over some years to find out the effect of cyclones on the performance of the Ollier and Nain varieties of bananas has confirmed that the Nain variety is considerably more resistant to cyclones and more economic to grow.

CENTRE DE FLACQ DEMONSTRATION CENTRE

288. 2,470 kgs of foodstuffs were produced and 6,300 canes were sold to planters for planting material. A considerable amount of fruit trees seedlings and ornamentals were produced for sale to the public and for planting on school premises. Two silo pits were filled with chopped cane tops in October and November. The Anglo Nubian buck served ten does of private breeders and two Anglo Nubian goats were sold for breeding purposes. The three does on the Demonstration Centre gave birth to seven kids. The station produced 3,258 eggs and 1,378 litres of milk. The cow gave birth to a calf at the beginning of June.

289. Ten groups of planters were shown around the station during the year to keep them informed about the aspects of Extension work on the Demonstration Centres.

PLAISANCE DEMONSTRATION CENTRE

290. 3,285 kgs of foodstuffs were produced and sold. 5,000 units of the sugarcane variety M.442/51 were sold to small planters and 9 tons 490 of sugarcane sent for milling. 838 eggs and 316 plants were produced and sold. Seedlings of mangoes, custard apple, dwarf lemon and pawpaw were produced for sale on the station. Good quality silage was obtained when the silo pit was opened. The pit was refilled in September. Three Anglo Nubian bucks died of Coccidiosis and of Trichuris. Observational trials laid down with the Red Creole Variety of onion showed that it outyielded the local variety by as much as $1\frac{1}{2}$ tons per arpent. It has been demonstrated that the application of 100 kgs of Sulphate of Potash instead of 50 kgs resulted in an increase in yield of 2 tons of potato per arpent.

ASSISTANCE TO SMALL GROWERS

291. During the year corrugated iron sheets were distributed to cow-keepers for the construction of cow sheds from all the Demonstration Centres.

292. In an effort to promote the cultivation of the Red Creole variety of onion, 100 lbs of seed of that variety was introduced. A considerable amount was sold after intense campaign among the onion growers. The planters have not generally been impressed by that variety, but they are still confident in its yield possibilities following good results obtained by some growers.

293. There was a considerable demand during the year for rice seeds for growing. Seeds were purchased locally to supplement the stock within the department and they were sold to planters to rationalise the distribution and the plantings. Fields of over 100 planters were inspected by Extension Officers involving more than 200 arpents. Some 450 kgs of seeds were subsequently distributed worth around 65 arpents.

294. The survey, in connection with a comprehensive project of planting of fruit trees and ornamentals in all primary school yards, which was started late in 1956 was continued and ended by the middle of the year under review.

295. Recommendations as to the type, the number of fruit trees and ornamentals and their layout were made for each school. Over 115 schools were so visited and a total of over 1,500 plants have been so recommended. Some schools took steps to fetch the plants themselves but in the majority of cases the plants were delivered by the Extension Officers with transport facilities provided by the Extension Service. Some 72 schools were so delivered with fruit trees and ornamentals totalling around 1,075 plants. The Extension Officers supervised the planting of these plants at the school sites and paid subsequent visits to give advice on the aftercare of the planted trees.

296. The Poor Institutions received the regular visits of the Extension Officers who gave advice on general farming matters and delivered various vegetable seeds to them.

297. The need for soil conservation measures in plantations of sugarcane on slopy lands is now a recognised feature by planters in general and many plantations on such lands are carried out across the slope.

LIAISON WITH THE MAURITIUS SUGAR INDUSTRY RESEARCH INSTITUTE

298. The close contact established between the officers of the Extension Service and those of the Mauritius Sugar Industry Research Institute was maintained throughout the year. The following talks delivered at the Institute were attended by officers of the Extension Service:

- 14. 2.67 Le diagnostic foliaire et les unités permanentes d'échantillonnage
- 14. 3.67 Revue des travaux de M.S.I.R.I. en 1966.
- 18. 4.67 The problems encountered in the selection of sugarcane varieties.
- 16. 5.67 Les variétés de cannes récemment homologuées pour la grande culture.
Multiplication rapide des cannes.
- 13. 6.67 Le "Wilt" de la canne à sucre et quelques problèmes associés.
associés.
The aspects of citrus growing in Brazil compared to those in Mauritius.
- 18. 7.67 Quelques aspects de la fertilisation de la canne à sucre à Maurice à la lueur des connaissances actuelles.
- 22. 8.67 Comportement des variétés de cannes en relation avec l'eau.
Court exposé sur l'efficacité de nouveaux herbicides.
- 26. 9.67 Plant parasitic-nematode.
- 24.10.67 La situation variétale en fonction d'observation récente sur la gommose.
- 28.11.67 Multiplication rapide des variétés de cannes à sucre.
- 29.11.67 La Recherche Agronomique.

MISCELLANEOUS ACTIVITIES

299. The "Produce More Food Campaign" was extended to the villages Long Mountain, Petit Raffray, Médine, Mont Ida, Dagotière, Pointe aux Sables, Dubreuil, Mare Tabac and La Flora. As in past years efforts were mainly directed towards the growing of fruit trees. The saturation of the local market for eggs and the low prices of that produce has resulted in a poor interest in more poultry keeping and deliveries under the campaign slumped to the figure of 118 compared with over 7,400 in 1966.

300. Activities within the "Campaign" were concentrated in the following villages: Notre Dame, Long Mountain, Vale, Fond du Sac, Petit Raffray, Centre de Flacq, Médine, Mont Ida, Petit Verger, Dagotière, Petite Rivière, Pointe aux Sables, Carreau La Liane, Solferino, Dubreuil, Rose Belle, Mare Tabac, Souillac and La Flora.

301. Committees were formed in these villages to work within that campaign.

302. Fruit trees were delivered to "Produce More Food Campaign" villages, Young Farmers Clubs, Youth Clubs and the public through the "Freedom from Hunger Campaign", transport being provided when required by the Extension Service. Some 1,800 fruit trees were delivered to the "Produce More Food Campaign" villages. Late in the year the Extension Service gave assistance in a programme of fruit trees planting undertaken by the Northern Clubs Association.

303. Planting material of grasses and various foodcrops such as banana, sweet potatoe, manioc, acacia and pineapple were given free on request. Six Anglo Nubian goats were sold to breeders for upgrading of stock.

304. It is to be noted that the "Produce More Food Campaign" is stimulating an increasing interest in the planting of fruit trees. There is keen interest in the Government Nurseries and there is a tendency with some members of the public to have their own nurseries and to participate in the effort to raise more plants.

305. (a) A new activity which has started late in the year under review on a trial basis is the establishment of Rural Youth Clubs. This movement has been launched to meet the imperious need for better farmers to meet the challenge of diversification of the agricultural economy and of more intensified production from the land. The objective set up is the grouping of the youth of rural areas, sons of our farmers and who are going to be our farmers of to-morrow in order to train them to become good farmers. The results obtained have been very encouraging and the movement is now fast gathering momentum. 23 such clubs were established late in the year. Lectures, practical demonstrations, film shows and conducted tours for the benefit of the youngsters have been programmed and are being implemented.

(b) The Extension Service organised a series of weekly lectures on general aspects of agriculture at the College of Agriculture for the benefit of the public at large. The lectures were held from February to July. There was a high number of registrations at the start but the attendance dwindled as the lectures went on. However a core of interested youngsters attended the course right through thereby upholding the value of the lectures.

306. The Extension Service also participated in the activities connected with the Social Welfare Months organised throughout the country by delivering lectures on agriculture topics within the spirit of the "Produce More Food Campaign". Lectures were delivered in 21 villages and drew a numerous attendance.

307. Under the F.A.O./UNICEF/WHO Agricultural Extension and Home Economics Program which was launched in 1966, the Extension Division participated in a Refresher Course provided for the benefit of Social Welfare Officers. Two lectures designed to increase interest in home food production were given.

308. Eight silo pits were filled during the year. The material from pits which was filled last year were generally of good quality and palatable.

However, the interest of cowkeepers in this type of livestock feeding continues to be very poor in spite of continued efforts to make them aware of the help to be obtained therefrom in the periods of fodder shortage.

309. Most of the professional planters are now provided with their own sprayers rendering the facilities provided by the Extension Service no longer necessary except in case of sudden and severe outbreaks of disease and pests. A large scale spraying was conducted in Black River under the supervision of the Extension Officer to fight a severe attack of Potato Moth borer.

310. There has been no subsidy on the purchase of certified seed potatoes as the scheme ended in 1966. However, work in connection with the registration of growers and the issue of permits was carried out as in the past years. A total of 1,368 permits were issued during the whole season and 1,138 tons of seed potatoes were bought at the Agricultural Marketing Board. It is estimated that 1,333 arpents of land were put under potato during the whole year. Although yields were somewhat affected in the late planting season due to infestation by tuber moth borers, the favourable conditions which prevailed throughout the planting season helped to produce a record yield of 6.9 tons per arpent. The 1,333 harvested arpents yielded an estimated total production of 9,199 Metric Tons. To the favourable conditions for good yields must be added the better application in the field by potato growers of the advices from the Extension Officers. In this connection must be noted the better inputs of fertiliser and the more rational use of pests and disease chemical control measures quite apart from the use of certified seed potatoes which has come to be of standard use by virtually all potato growers. The producer price was fairly high for the greater part of the season and that was responsible to a large extent for maintaining the acreage grown at a high level. The market price maintained at a fairly high level at the beginning and the mid season but fell sharply later.

311. Various surveys were conducted during the year, including:

1. Assessment of Crown Lands for Rental Value and suitability for agricultural development.
2. Gummosis and Leaf Scald Survey to assess distribution in sugarcane fields of small planters.
3. Assessment of damage done to crops as a result of indiscriminate use of herbicides.
4. Survey of fields in connection with their suitability for rice growing.
5. Investigation of fodder problems.
6. Recording of statistical data for foodcrops under harvest.
7. Inspection of fields in connection with the delivery of potato seed permits.
8. Assessment of potato and onion acreages grown and production for the Agricultural Marketing Board.
9. Weekly recording of market prices for vegetables.
10. Estimation of annual foodcrop and fruit harvest.

XVI. Foodcrops

312. The following tables were prepared from data collected by the Extension Service:—

Year	AREA HARVESTED (ARPENTS)														Total	
	Maize	Manioc	Aronilles	Sweet Potatoes	Groundnuts	Irish Potatoes	Beans & Peas	Pine Apples	Brinjal	Tomatoes	Ginger	Creechers	Mixed Vegetables	Bananas		
1966	...	430	44	97	69	577	1,260	760	86	296	1,356	136	1,645	1,291	926	8,973
1967	...	662	64	75	40	671	1,333	685	113	327	1,844	119	1,451	1,420	984	9,788
ESTIMATED AVERAGE YIELD KGS/ARPENT																
1966	...	698	7,909	4,722	5,058	1,442	6,700	992	4,977	6,378	4,204	5,603	6,483	5,944	9,744	—
1967	...	690	7,094	5,333	5,825	1,310	6,901	1,058	4,336	5,804	5,666	8,151	6,438	5,335	10,025	—
ESTIMATED TOTAL COMMERCIAL PRODUCTION (METRIC TONS)																
1966	...	300	348	458	349	832*	8,442	754	428	1,888	5,700	762	10,664	7,674	9,023	47,622
1967	...	457	454	400	233	879*	9,199	725	490	1,898	10,449†	970	9,342	7,575	9,865	52,936

* Green Weight.

† About $\frac{1}{2}$ of the total production did not reach the markets.

The area shown above was effective acreage harvested and includes the aggregate acreages of different crops grown on the same land in one year, as well as foodcrops interplanted with sugar-cane.

XVII. Experiment Stations

CUREPIPE EXPERIMENT STATION

Development

313. (a) (i) About six acres of scrub and marshy land were cleared levelled, drained and four acres planted under *Setaria sphacelata* var. (*Bua River*) and the rest under *Colacasia esculenta*.
- (ii) About one acre of uncultivated land has been reclaimed and prepared for establishment of pasture species early in January, 1968.
- (b) Six hundred feet of roads, 12 ft. wide, were made during the year as well as a concrete bridge twelve feet long and eleven feet wide.
- (c) A concrete trench silo of about 100 tons capacity was constructed. It will be used mainly to ensile the surplus of fodder produced during the summer months at Curepipe and Plaisance Experiment Stations for use during the winter months when the growth of grass is slow.

Fodder

314. *Vigna marina*, a leguminous plant for use as fodder, was sown for observation on a small plot on 1.9.67. Germination was good and the growth of the plant has been satisfactory.

315. Of the other species of fodder planted the previous year the following gave the best results:

Fodder species	Calculated yield / acre	
	Total of 6 cuts. tons of fresh weight	
Hyparrhenia sp. (local strain) ...	...	39.9
Elephant Grass (selection) ...	...	31.7
Panicum maximum (Sigor) ...	...	25.8
Chloris gayana No. 12 ...	...	24.8
Chloris gayana No. 6 ...	...	23.7
Panicum makarikariensis ...	...	24.7
Slender Guinea ...	...	22.3

316. The fertiliser trial on *Setaria sphacelata* (Var. *Bua River*) laid down on 16.10.63. The treatments were: 1—two rates of Nitrogen: N1=40 lbs and N2=80 lb N per acre applied as Sulphate of Ammonia after each cut in conjunction with annual applications of:

- (a) B1=40 lb K₂O per acre as Sulphate of Potash plus 40 lbs P₂O₅ per acre as single Superphosphate.
- (b) B₂=80 lbs K₂O per acre and 80 lbs P₂O₅ per acre was cut and 4 times in 1967 on 14/1, 10/3, 9/6 and 8/12.

Result were as follows:

Treatments	...	...	...	N ₂ B ₂	N ₂ B ₁	N ₁ B ₂	N ₁ B ₁
Yields tons/acre per year	...	...	...	61.29	58.72	55.25	53.12
L.S.D.				5% = 2.29 tons per acre.			

317. An experiment to assess the value of Calcium silicate and Coralline sand on the growth and yield of grass and Maize was laid down on 8.12.67.

318. The Spacing Trial with *Setaria sphacelata* laid down in December 1964 with spacings of 1 ft, $1\frac{1}{2}$ ft, $2\frac{1}{2}$ ft, 3 ft by 6 ins. and 1 ft respectively was cut 4 times in 1967—on 24.4, 25.7, 18.10 and 27.12. The results of the yield of green fodder in tons per acre were the following:

Spacing	Yield tons/acre fresh material	Spacing	Yield tons/acre fresh material
$1' \times \frac{1}{2}'$	49.90	$2\frac{1}{2}' \times \frac{1}{2}'$	43.80
$2' \times 1'$	48.39	$3' \times \frac{1}{2}'$	42.47
$2\frac{1}{2}' \times 1'$	47.38	$1\frac{1}{2}' \times \frac{1}{2}'$	40.55
$2' \times \frac{1}{2}'$	46.39	$1\frac{1}{2}' \times 1'$	39.27
$3' \times 1'$	44.85	$1' \times 1'$	35.83
L.S.D. : 1% $\pm$ 1.41 tons/acre			
5% $\pm$ 1.03 tons/acre			

319. The spacing trial elephant grass at spacings of 1 ft, 2 ft, 3 ft and 4 ft between rows by 6 ins. and 1 ft in the row respectively laid down on 11.1.65 was continued. 4 cuts were made in 1967 (on 2.2, 31.3, 10.7 and 3.11) and the following results obtained:

Spacing	Yield tons/acre of fresh material
$2' \times 1'$	24.42
$3' \times 1'$	24.27
$4' \times 1'$	23.43
$4' \times \frac{1}{2}'$	21.23
$3' \times \frac{1}{2}'$	20.85
$2' \times \frac{1}{2}'$	19.97
$1' \times \frac{1}{2}'$	19.82
$1' \times 1'$	17.40

Miscellaneous

320. 600 tons of green fodder were supplied to the Curepipe Livestock Breeding Centre during 1967.

321. In addition 166 tons of sugarcane tops silage and 440.3 tons of fresh sugarcane tops were also supplied to the Livestock Breeding Centre.

ORCHARD CROPS

Citrus

322. Mandarin seedlings grown in the year 1958 bore a fair amount of fruits in 1967. The average yield of fruits of the different varieties were:

No. of trees	Variety	Av. No. of fruits per tree	Av. No. of fruits per tree in lbs
16	Djerœk Keprok Pœnten ...	112	17.5
10	Djerœk Keprok Garcet ...	42	6.4
2	Fagan ...	71	7.0
17	Local ...	39	4.7
1	Express ...	—	—
2	Vangassaille ...	115	10.9

Grapefruit

323. Of the citrus plants growing at Curepipe, Grapefruit variety Jaddoo seems to thrive very well.

324. 4 grafted trees planted in 1964 produced 133 fruits for the first time; the fruits were of good size and quality.

Guava

325. 84 guava plants of various varieties growing at Curepipe Experiment Station flowered and produced fruits. The yields were as follows:

<i>No. of trees</i>	<i>Variety</i>	<i>Av. No. of fruits per tree</i>	<i>Av. Wt. per tree of fruits in lbs</i>
60	South African White	187	23.0
6	Barkly Selection	273	14.6
2	Acid Florida strain	155	28.7
2	Sweet olive coloured flesh	165	28.
2	Red Round	125	20.
1	Seedless	16	2.

Coffee

326. 39 out of 47 coffee trees of variety Arabica growing at the Station since January 1963, flowered and bore fruits. Ten best yielding trees produced beans as follows:

<i>Tree No.</i>	<i>Total No. of beans</i>	<i>Total Green wt. in lb</i>
24 ...	3,209	14.713
41 ...	3,407	12.566
30 ...	2,740	12.411
17 ...	2,345	11.255
31 ...	2,107	10.121
29 ...	1,896	8.854
8 ...	2,012	8.623
18 ...	1,174	8.105
38 ...	1,833	7.940
23 ...	1,148	7.874

327. Again this year only a few plants of variety Excelsa produced some flowers and an insignificant number of fruits.

328. Two persimmon plants of the local variety produced a large number of rather small fruits which were acid.

Strawberry trial

329. Varieties Cambridge, No. 1/8 and 1/4 were planted on 28.4.66 in observation plots. Fruits were produced from 8.9.67 to 26.10.67.

Yields were as follows:

<i>Variety</i>	<i>Yield of fresh fruits</i>
Cambridge	0.4516 ton/acre
No. 1/8	0.5074 ton/acre
No. 1/4	0.5088 ton/acre

Arouille Carri

330. A 33 factorial Fertilizer Trial with *Colacasia esculenta* variety *carri* planted on 10.5.66 was harvested during mid March 1967. The rates of Fertiliser applications were 0,30 and 60 lbs per acre for N, P₂O₅ and K₂O given to the crop at time of planting as well as a uniform basis application of farmyard manure at the rate of 10 tons per acre in all the plots.

331. The results of yields of freshly harvested *Colocasia esculenta* roots (calculated to tons per acre) were as follows:

		P0	P30	P60	K0	K30	K60	Means
N0	...	11.55	9.46	11.79	12.07	10.44	10.30	10.90
N30	...	12.60	9.42	7.07	9.42	9.92	9.74	9.69
N60	...	10.48	11.31	11.13	11.80	11.52	9.60	10.97
P0	...	—	—	—	12.78	11.08	10.76	11.54
P30	...	—	—	—	11.44	9.51	9.26	10.07
P60	...	—	—	—	9.08	11.30	9.63	10.00
Means	...	11.54	10.06	9.99	11.10	10.63	9.88	10.54

L.S.D. @ 5% = $\pm$ 2.245 tons / acre

@ 1% = $\pm$ 3.108 tons / acre

Potato conservation trial

332. Five varieties of potatoes grown at Plaisance Experiment Station were placed in the Potato bins for conservation on 18.7.67.

333. Cold air was blown daily for half an hour in the early morning by means of the "Typhoon axial Flow Unit" and when required the sprout depressant "Nonanol" was also added to the air flow.

334. In December the treatment with Nonanol was stopped and the tubers taken out on 18.1.68.

335. The following results were obtained:

Variety	Wt. of good tubers (Kgs)		% of loss
	Placed in bin on 18.7.67	Taken out from bin on 18.1.68	
Arran Banner	... 270.0	114.4	57.7
Ulster Torch	... 175.0	140.0	20.0
Ulster Supreme	... 288.0	152.5	47.1
Morris Peer	... 231.5	101.0	56.4
Alpha	... 138.0	45.0	67.4

Sweet potato

336. A Variety Trial with six varieties of sweet potatoes were planted on 10.11.66. The plots received a uniform treatment of 30 lb per acre each of N, P_2O_5 and K_2O and 6 tons of farmyard manure before planting. The crop was harvested during the second fortnight of April 1967 and the following yields were obtained:

Variety	Yield Tons per acre
Violette	... 8.58
Mirabelle	... 6.22
Joes	... 6.20
Patate Raisin	... 6.02
Patate Rouge	... 5.98
Pelican Processor	... 5.54

L.S.D. @ 5% = $\pm$ 1.43 tons per acre

L.S.D. @ 1% = $\pm$ 1.98 tons per acre

Onion Storage Experiments

337. An investigation was carried out on the keeping quality of bulbs of various varieties. The bulbs were separated in 3 sizes, viz: with diameter:

(i) over 2 ins (Grade I)

(ii) 1 in. to 2 ins. (Grade II)

(iii) less than 1 in. (Grade III)

20 bulbs of each of the 3 sizes, i.e. 60 bulbs for each variety, were placed separately in trays in a room on 19.11.66.

338. The results expressed as a per cent of sound bulbs were as follows:

Variety		19/11/66	19/12/66	20/1/67	17/2/67	19/5/67	22/6/67
		%	%	%	%	%	%
Red Creole Grade I	...	100	100	95	85	60	15
	II	100	100	85	80	60	30
	III	100	100	100	90	45	15
Local Red Grade I	...	100	100	100	80	25	25
	II	100	100	100	95	25	25
	III	100	100	100	90	35	25
Rowcliffe Grade I	...	100	100	85	55	5	—
	II	100	100	85	50	5	—
	III	100	100	85	60	5	—
Bombay Large Red Grade I	...	100	80	75	60	—	—
	II	100	100	75	65	60	—
	III	100	100	85	65	—	—
Bombay Red Round Grade I	...	100	90	70	35	5	—
	II	100	100	95	40	15	—
	III	100	100	90	80	5	—
Early Grano Grade I	...	100	100	50	35	5	—
	II	100	95	85	25	—	—
	III	100	85	65	45	5	—
Hunter River Brown Grade I	...	100	80	50	15	5	—
	II	100	100	70	35	10	—
	III	100	100	50	30	20	—
Early Yellow Cape Flat Grade I	...	100	90	45	25	—	—
	II	100	95	70	30	5	—
	III	100	100	85	50	10	—
Hunter River White Grade I	...	100	80	35	25	5	—
	II	100	100	65	25	5	—
	III	100	90	60	45	—	—
Texas Grano Grade I	...	100	80	50	5	—	—
	II	100	95	45	25	—	—
	III	100	95	45	35	—	—
Fellow Bermuda Grade I	...	100	85	50	10	—	—
	II	100	90	70	30	5	—
	III	100	100	90	65	15	—

B. Onion bulbs of the above eleven varieties were also kept in crates.

399. The crates measured 3 ft. long, 2 ft. wide and 6 ins. high. Each crate had three compartments for the 3 grades of bulbs, as for experiment "A".

340. The trial started on 1.12.66.

341. The weight of good bulbs remaining after every "sorting out" expressed as a percentage of the weight of the bulbs at the start of the experiment are tabulated below:

<i>Variety</i>		<i>1.12.67</i>	<i>22.12.67</i>	<i>24.1.68</i>	<i>21.2.68</i>	<i>20.4.68</i>	<i>19.5.68</i>	<i>22.6.68</i>	<i>Remarks</i>
Early Grano Grade	I 100%	55.8	24.0	10.2	1.4	0.1	—	—	
	II	46.9	15.5	9.0	1.7	0.03	—	—	
	III	—	—	—	—	—	—	—	In grade III no bulb available
Hunter River Brown Grade	I 100%	53.4	19.7	9.4	1.9	0.4	—	—	
	II	45.8	16.3	5.9	1.3	0.4	—	—	
	III	—	—	—	—	—	—	—	In grade III no bulb available
Hunter River White Grade	I 100%	62.2	29.5	10.8	2.8	0.7	—	—	
	II	39.8	14.7	7.4	2.9	0.8	—	—	
	III	—	—	—	—	—	—	—	In grade III no bulb available
Early Yellow Cape Flat Grade	I 100%	59.1	17.4	4.8	0.7	—	—	—	
	II	53.0	20.7	8.9	1.9	0.3	—	—	
	III	59.4	30.3	13.5	3.2	0.4	0.1	—	
Yellow Bermuda Grade	I 100%	59.2	27.1	5.7	—	—	—	—	
	II	62.1	24.3	8.9	0.2	—	—	—	
	III	43.7	15.6	5.2	2.0	—	—	—	
Local Red Grade	I 100%	95.0	59.0	45.5	15.2	2.5	—	—	
	II	94.5	75.6	52.9	18.0	3.6	—	—	
	III	92.5	5.5	3.5	1.7	0.5	—	—	
Rowcliffe Brown Grade	I 100%	70.5	33.2	9.3	2.0	0.4	—	—	
	II	69.4	39.1	18.7	3.7	1.4	—	—	
	III	47.4	27.2	8.4	3.0	1.2	0.2	—	
Bombay large Red. Grade	I 100%	37.5	16.6	11.6	8.6	1.7	—	—	
	II	—	—	—	—	—	—	—	
	III	—	—	—	—	—	—	—	Not available in grades II & III
Red Creole Grade	I 100%	96.1	73.4	54.1	25.9	16.4	6.5	—	
	II	79.4	58.4	47.3	22.3	12.6	4.4	—	
	III	48.0	2.8	2.0	1.2	0.5	0.1	—	
Bombay Red Round Grade	I 100%	74.7	38.6	21.9	8.9	2.9	—	—	
	II	64.9	42.1	27.1	18.2	3.6	—	—	
	III	56.3	38.9	36.9	10.9	4.1	—	—	
Texas Grano Grade	I 100%	40.1	8.0	0.8	0.01	—	—	—	
	II	36.6	10.5	2.6	0.08	0.02	—	—	
	III	3.5	3.5	2.9	0.03	0.03	—	—	

C. In a third storage experiment onion was stored in bags hung on hooks attached to a beam. In this trial the bulbs were not graded. Six varieties, e.g. Bombay Large Red, Yellow Bermuda, Red Creole, Rowcliffe Brown, Early Yellow Cape Flat, Early Grano and Local Red were placed in 2 c.ft.

bags. The bags were weighed at the start of experiment and after each sorting out of rotten and germinating bulbs. The bags were 'randomized' and were hung under an open shed. The result obtained expressed as a percentage of good usable bulbs were as follows:

Variety	Dates of sorting out			
	27/12	25/12	20/2	5/4
	%			
Bombay Large Red ...	100	80.0	13.3	1.6
Yellow Bermuda ...	100	83.4	2.5	—
Red Creole ...	100	88.3	25.3	3.1
Rowcliffe Brown ...	100	93.4	13.2	—
Early Yellow Cape Flat ...	100	52.6	—	—
Early Grano ...	100	52.1	—	—
Local Red ...	100	86.4	56.1	19.8

Beans

342. A Variety Trial with beans varieties Long Tom, Pioneer, Victory, Golden Queen, Prolific Long-Podded, Local Red, Marlah, Redland Belle, Redland Greenleaf, Deuil de Precoce, Super-Production and Fin de Bagnol was planted on 4.4.67 for assessing yield of green pods. In this experiment the incidence of halo blight and rust were also noted

343. The crop was harvested on 26.5., 2.6. and 8.6.67 and the total yields were as follows:

Variety	Yield in tons/acre of green pods	Incidence of diseases		
		Angular leaf spot	Mosaic	Halo blight
Prolific Long podded ...	2.706	+	—	+
Victory ...	2.408	—	—	+
Golded Queen ...	1.964	—	—	—
Pioneer ...	1.428	+	—	+
Red Land Green Leaf ...	1.175	+	—	—
Long Tom ...	1.025	—	—	—
Deuil de Précoce ...	0.992	—	—	—
Local Red ...	0.594	+	+	+
Marlah ...	0.435	—	—	—
Super production ...	0.164	+	+	—
Redland Belle ...	0.144	+	—	—
Fin de Bagnol ...	0.063	+	—	—

+ = Susceptible

— = Resistant

Miscellaneous—Vegetables

344. Various vegetables such as Beans, Cabbage, Cauliflower, Calabash, Lettuce, Pumpkin, Peas and squash which are usually grown in other parts of the country as winter crops were grown successfully on the station in summer.

Livestock

345. Geese and duck continued to be kept in association with the fresh water fish. During the year 27 ducks and 10 geese were sold to the public. 895 duck eggs were produced and most of them were also sold. The following birds were left at the end of 1967:

Geese	...	...	16
Ducks	...	...	22

346. Up to now the Black Swans received from the Government of Australia in 1958 have not laid eggs.

Miscellaneous

347. The rainfall registered at the station during 1967 was as follows:

	<i>Total for ins</i>		<i>Total for ins</i>
January ...	29.64	July ...	13.73
February ...	5.46	August ...	10.26
March ...	12.03	September ...	5.17
April ...	10.87	October ...	10.95
May ...	10.53	November ...	11.61
June ...	11.63	December ...	14.24

The total for the whole year amounted to 146.12 in.

Seed Production

348. The following were grown for seeds during the year and sent to Barkly Experiment Station for manipulation and sale to the public:

Pumpkin, Cucumber (white), Calbash, Squash, Snake gourd,
Chillies variety cipaye, Brède de Chine (frisée).

349. The area under these crops during the year were 3.5 acres.

350. The total cash revenue derived from sale of agricultural produce at Curepipe Experiment Station amounted to Rs 4,454.52.

PLAISANCE EXPERIMENT STATION

Development

351. The station has been extended by about 5 acres of land which is situated east of the Demonstration Plot of the Extension Service. The land was fallow. It has been cleared, levelled, and divided into 3 fields measuring about 1 acre, $1\frac{3}{4}$ acres and $2\frac{1}{4}$ acres respectively. Access roads, 12 feet wide, have been made.

352. This area has been fenced with barbed wire fixed on wooden posts. Hedges of *Leucaena glauca* have also been planted.

353. The following crops were grown during the year:

Pomme d'Amour, Sunflower, Phaseolus sp., Beans, Groundnuts,
Maize, Peas, Potato and Ginger.

ORCHARD SECTION

Citrus

354. The fertilizer trial started in 1962 was continued.

355. The citrus trees have increased in size. However, the bearing of fruits has not been so impressive as in the previous year. This was probably due to:

(a) last year's excessive bearing

(b) drops of unripe fruits due to cyclone *Gilberte*, in January:

The best yielding trees of the different varieties were:

<i>Variety</i>	<i>Age</i>	<i>Tree No.</i>	<i>Total No. of fruit harvested</i>	<i>Total Weight lb-oz</i>	<i>Average wt. fruit lb-oz</i>
Pineapple ...	5 years	2	24	16-10	11
do ...	"	9	15	24-3	1-10
do ...	"	7	9	6-0	10.6
Washington Navel	"	4	47	36-5	12
do ...	"	11	43	31-15	12
do ...	"	20	41	43-8	17
Valencia ...	"	1	495	216-6	.7
do ...	"	2	448	196-8	.7
do ...	"	5	391	166-13	6.8
Parson Brown	"	12	315	144-7	.7
do ...	"	1	266	104	6.2
do ...	"	18	250	117-13	7.5
Navalencia	"	4	86	59-10	11.7
do ...	"	3	65	50-12	12.5
do ...	"	12	61	42-3	11.6

Coconuts

356. Practically all the coconut plants planted in 1962 and 1963 have been bearing quite an impressive number of fruits.

357. Five best yielding plants from the different varieties grown have given the following average production:

	<i>Nuts</i>
Pemba ...	246
Malayan dwarf green ...	168
Malayan dwarf yellow ...	132
Malayan dwarf red ...	129

Grapes

358. The trial of "Citronelle" variety of grapes grafted on different stocks viz. Couderc 13, Isabelle Vacoas and Isabelle Barkly planted in 1965 and trained on trellis was pruned on 8.9.67. Vigorous shoots grew out, the plants flowered and fruited. Harvest was made in February 1968.

359. The ripe fruits when harvested were tested for quality and sweetness. It was observed that in all the bunches of grapes harvested, all the fruits were not equally ripe in the bunch. On the whole the test gave the following results: the sweetest fruits were from plants ungrafted i.e. Citronelle on its own root, followed by grafts of Citronelle on Isabelle Vacoas, Isabelle Barkly and lastly Couderc 13.

360. The plants of Citronelle on its own root, however, continued to show rather slow growth.

361. The average yields per plant for the different stocks were as follows:

	<i>lb.</i>	<i>oz.</i>
Citronelle on Couderc 13	...	1 5
Citronelle on Isabelle Vacoas	...	2 12
Citronelle on Isabelle Barkly	...	2 10
Citronelle on its own root	...	— 10

Litchi

362. The litchi plants of strain Barkly selection No. 8, planted in March 1963, continued to grow well. Out of 75 plants 36 flowered but only 3 produced a very limited quantity of small and rather acid fruits.

Pineapple

363. The 33 Factorial Fertiliser experiment started in February 1965 was continued in 1967.

364. The rates of fertiliser applications were as follows:

			<i>lb/acre for the year</i>
N	...	...	0, 50, 100
P ₂ O ₅	...	...	0, 75, 150
K ₂ O	...	...	0, 75, 150

365. Nitrogen was given in the form of Sulphate of Ammonia in 4 applications:

- (i) End of February,
- (ii) Beginning of June,
- (iii) End of August,
- (iv) Beginning of December:

Phosphorus (P₂O₅) as triple Superphosphate and potassium (K₂O) as Sulphate of potash in 2 applications:

- (i) End of February
- (ii) End of August.

366. Good yield of fruits were obtained and the results showed no response to the application of N, P or K.

Mangoes

367. The mango orchard was kept clean of undergrowth. Dead branches were removed from the trees. Only a few plants flowered this year and practically no fruits were formed. This was due to the usual quantities of rain in October when the trees were in bloom.

Pawpaws

368. 60 pawpaw seedlings of variety Wilcox planted in a single row along the edges of fields, 10 feet apart on 23.2.66 started to bear fruits in January, 1967. 164 selected fruits were collected during the year and sent to Barkly for seed.

Miscellaneous fruit trees

369. Custard apple and Bullock's Heart plants planted in May 1966 for observations on yield, diseases and pests are doing well. The custard apple plants flowered in October/November and have produced some fruits. The Bullock's Heart plants are healthy but have not flowered yet.

Ginger

370. (a) A 33 Factorial Fertiliser trial with ginger, of the variety grown locally was laid down on 28th December, 1966. It was lifted on 15th September, 1967. The fertilizer rates were : (i) 0,40 and 80 lb nitrogen in the form of Sulphate of Ammonia; (ii) 0,36 and 72 lb P_2O_5 as Triple Superphosphate and (iii) 0,50 and 100 lb (K_2O) as Sulphate of Potash applied before planting. Two setts were planted per hole and the holes were spaced 2 ft. by 9 ins.

371. The calculated yields in tons per acre of freshly harvested material were as follows:

		N_0			N_1			N_2			Total	Means
		P_0	P_1	P_2	P_0	P_1	P_2	P_0	P_1	P_2		
K_0	...	10.29	7.43	6.26	6.38	5.48	6.09	5.99	7.41	6.60	61.93	6.87
K_1	...	6.09	9.98	5.89	11.22	7.82	8.88	6.44	7.94	11.56	75.82	8.41
K_2	...	6.56	6.56	13.30	9.46	10.77	7.09	11.50	6.90	7.23	79.37	8.82
Total	...	22.94	23.97	25.45	27.06	24.07	22.06	23.93	22.25	25.39	217.12	—
Means	...	7.65	7.99	8.28	9.02	8.02	7.35	7.98	7.42	8.46	—	8.02

		N_0	N_1	N_2	Total	Means
P_0	...	7.65	9.02	7.98	24.65	8.22
P_1	...	7.99	8.02	7.42	23.43	7.81
P_2	...	8.28	7.35	8.46	24.09	8.03
Total	...	23.92	24.39	23.86	72.17	—
Means	...	7.97	8.13	7.95	—	8.02

LSD @ 5% = 1.43 tons per acre

Groundnuts

372. (b) A trial with varieties Local, Manipintar, Mgongo and Makulu Red was planted on 6.8.66. The varieties Local, Mgongo and Makulu Red were lifted on 28.3.67 and variety Manipintar on 28.4.67.

The crop suffered from drought.

The yields of freshly harvested nuts were:

		tons per acre
Mgongo	...	2.215
Makulu Red	...	1.428
Local	...	0.857
Manipintar	...	0.821

L.S.D. @ 5% : $\pm$ 0.255 ton per acre

L.S.D. @ 1% : $\pm$ 0.367 ton per acre

Beans

(c) (i) In a variety trial, varieties: Long Tom, Pioneer, Local Red, Prolific Long-podded and Victory were planted on 19.6.67. The pods were picked green at kitchen stage for use as vegetable, on the following dates: 4/8, 8/8, 11/8, 17/8, 21/8 and 24/8/67.

The total yields per acre of green pods were:

<i>Variety</i>	<i>Yield tons/acre fresh weight</i>
Victory	6.48
Prolific Long podded	5.82
Pioneer	5.79
Long Tom	5.69
Local Red	5.38
L.S.D. at 5% = .301 tons/acre	

(ii) In a fertilizer trial with variety Victory planted on 28.7.67, the following treatments were given: N at the rates of 0 and 40 lb per acre as Sulphate of Ammonia, P_2O_5 at the rates of 0 and 80 lb per acre as Triple Superphosphate and K_2O at 0 and 80 lb per acre as Sulphate of Potash and Farmyard manure (symbol D) at 0 and 15 tons per acre. The fertilizers and manure were applied direct in the holes before planting.

373. The green pods were picked at kitchen stage on 13.9, 19.9, 3.10 and 10.10.67.

The plot suffered from Halo blight, some rust on leaves and anthracnose.

The results were as follows:

<i>Treatments</i>	<i>Yield in tons per acre</i>
N. P. D.	5.24
N. P. K. D.	5.07
P. K. D.	4.87
K. D.	4.46
N. P.	4.17
N. P. K.	4.14
P. D.	4.08
N. K. D.	4.01
Nil	3.93
N. D.	3.93
K.	3.77
P. K.	3.50
D.	3.46

<i>Treatment</i>	<i>Yield in tons/acre</i>
N.	3.30
N.K.	3.03
P.	2.88
L.S.D. at 5% = 0.468 ton/A	

Maize

374. (i) In a fertilizer-spacing experiment with Local variety maize planted on 27.4.67 the following treatments were given:

Spacings

- (a) 3 ft×1 ft two plants per hole
- (b) 3 ft×1 ft two plants per hole
- (c) 3 ft×2 ft two plants per hole
- (d) 3 ft× $\frac{3}{4}$ ft one plant per hole.

(ii) Fertilizers t_1 : 100 kgs of Sulphate of Ammonia at planting time; t_2 : 100 kgs of Sulphate of Ammonia half at planting and the remaining half when the plants were knee high (i.e. on 15.6.67).

375. All plots received 50 kgs per acre of Triple Superphosphate and 50 kgs per acre of Sulphate of Potash at planting time.

376. The crop was harvested on 3.10.67 and the following results obtained:

<i>Treatments</i>	<i>dt₁</i>	<i>at₂</i>	<i>at₁</i>	<i>bt₁</i>	<i>dt₂</i>	<i>bt₂</i>	<i>ct₁</i>	<i>ct₂</i>
Yields of dry seeds in tons/acre	...	1.96	1.87	1.86	1.77	1.76	1.75	1.50 1.35

377. Statistical analysis showed no significant difference at both 5 per cent and 1 per cent levels.

(iii) A 33 factorial fertilizer trial with maize variety Hybrid No. 160 was planted on 20.3.67.

Fertilizer rates were as follows:

- (a) Nitrogen, as Sulphate of Ammonia, at 40 lb, 120 lb and 200 lb N per acre.
- (b) P_2O_5 , in the form of Triple Superphosphate, at 20 lb, 50 lb and 80 lb P_2O_5 per acre.
- (c) K_2O , as Sulphate of Potash, at 40 lb, 100 lb and 160 lb K_2O per acre.

378. The fertilizers were applied at time of planting. The crop was harvested on 20.6.67 and the results showed no response to N, P or K.

Onion

In a variety trial sown on 19.3.67 and transplanted between 6/6 and 13/6/67, the following varieties of onion were compared:

Red Creole, Hunter River Brown, Early Grano, Bombay Large Red and Local variety.

379. It consisted of 5 replicates and each variety plot contained 3 beds measuring $3\frac{1}{2}$ ft by 30 ft. The seedlings were spaced 4 ins. by 4 ins. on the bed.

380. The onions bulbs of variety Local were ready first for harvest and were lifted on 24.10.67 followed by Early Grano on 7.11, Bombay Large Red 8.11, Red Creole 10.11 and finally Hunter River Brown on 18.11.67.

381. The yields of bulbs were:

<i>Variety</i>	<i>tons/acre</i>
1. Early Grano	... 8.578
2. Hunter River Brown	... 8.352
3. Red Creole ...	... 7.803
4. Local ...	... 7.732
5. Bombay Large Red	... 6.679

382. Statistical analysis showed no significant difference in the yields of the different varieties:

Onion for seed Production

- (i) 100 lbs of onion bulbs of variety 'Local Red' were planted on 17.3.67 for seed production; growth and stand of crop proved promising and between the period from 4.7.67 to 2.8.67, 72 kgs of flower heads were picked.

The plantation was made over an area of $\frac{1}{4}$ acre:

- (ii) A few bulbs of each of variety Red Creole, Early Yellow Cape Flat, Early Grano, Hunter River Brown, Hunter River White, Yellow Bermuda, Bombay Red Round and Rowcliffe Brown were planted in May to see if they would set seed under our conditions. None of the varieties seeded.

Phaeolus mungo var. *Pinax* (Emberique vert)

383. About $\frac{1}{15}$ acre in area was planted on 10.2.67 for observation. The plantation was made in holes spaced 3 ft $\times$ $1\frac{1}{2}$ ft with 2 seeds per hole. The germination was 70 per cent. The plants grew quite healthy and the crop was harvested between the period from 11.4.67 to 14.6.67 and gave a yield of dry seed of 396 lbs/acre.

Phaseolus mungo var. *radiatus* (Emberique noir)

384. $\frac{1}{40}$ acre was planted on 20.2.67 for observation. The plantation was made in holes 3 ft $\times$ $1\frac{1}{2}$ ft with 2 seeds per hole. Germination was almost 100 per cent. The plants developed well but seemed to be rather susceptible to leaf miners. The harvest of dry pods was effected between 17.5.67 and 14.6.67 and the yield per acre of dry seeds was 905 lbs.

Sunflower variety trial

385. A variety trial with Sunflower was planted on 30.8.67. The varieties were Tennessee, Jupiter, Tchernianka, Vniimk, Peradovic and Hazera.

386. Harvest of flower heads was effected between the period from 5th December to 13th December, 1967, and the following yield of air dried seeds obtained:

Variety			Calculated yield/acre
Hazera	...	...	0.512
Jupiter	...	...	0.302
Tchernianka	...	...	0.301
Vniimk	...	...	0.207
Peradovic	...	...	0.269
Tennessee	...	...	0.247

L.S.D. @ 5% = $\pm$ 0.08636 Tons/acre

Seed Production

387. The following were supplied during 1967 to Barkly Experiment Station for seed:

- (a) Luffa—1974 selected fruits.
- (b) Eggplant var. Rosita—27 selected fruits.
- (c) Pawpaw var. Wilcox—164 selected fruits.
- (d) Coconuts var. Pembar—938 units
 - Malayan Dwarf Red—12 units.
 - Malayan Dwarf Yellow—318 units.
 - Malayan Dwarf Green—212 units.
- (e) Florida Rough Lemon—194 fruits.
- (f) Pomme d'Amour—8,285 lb.
- (g) Tomato var. Roma—415 fruits.
- (h) Peas var. Local—502 lb.
- (i) Peas var. Green feast—1,120 lb.
- (j) Maize var. local—1,023 lb.
- (k) Maize var. Israel No. 160—986 lb.
- (l) Garlic—146 lb.
- (m) Phaseolus Mungo—30 lb.
- (n) Phaseolus radiatus—34 lb.
- (o) Onion seed var. local—148 lb.
- (p) Onion seed var. Red Creole—55lb.
- (q) Lettuce seeds variety Mignonnette—2½ lb.
 - Lettuce seeds Merveille des 4 saisons—5 lb.
- (r) Groundnuts variety Local—1,148 lb.
 - Mgono—104lb.
 - Manipintar—41 lb.
 - Makulu—84 lb.

388. A total of 641 tons of Green fodder were supplied for feeding the animals at the Curepipe Livestock Breeding Centre during the year under review. It consisted of 212 tons of Elephant Grass, 203 tons *Setaria Sphacelata*, 185 tons acacia, 13 tons Pangola grass and the remainder of mixed grasses of different species.

CENTRAL EXPERIMENT STATION

Orchard Citrus

389. The 2½ acre citrus grove was maintained. Fertilisers were applied to all the plants according to their age. Irrigation, both surface and overhead, and spraying with Bidrin, Maneb, Soltosan, Perenox, Aureofungin (against canker), Rogor Streptocycline (Against canker @ 3 gms/ac), M/45 and Telodrin were done.

(a) All the 12 year old mandarine seedling varieties viz. Empress Fanga, Djerock Keproek Poenten, Djerock Garoet and Cleopatra and local tangerine produced fruits.

The 2 year old plants of grafted local mandarin were in bearing.

(b) All the Marsh grape fruit trees have been uprooted and have been replaced by Juddoo grapefruit plants. The Marsh grapefruit trees were found to be very susceptible to Tristeza a virus disease.

(c) Out of the twenty two Java Grape fruit seedlings (twelve year old), seven have been uprooted—three died and the other four were showing signs of disease attack.

Two six-year old, grafted local grapefruits (Juddoo) produced 1,718 fruits compared to 259 fruits produced last year.

(d) Fourteen 12-year old Semineole Tangelos seedlings produced a total of 3,935 fruits. The eight 12 year old Mincole tangelos produced 201 fruits. Out of the twelve Mineole tangelos budded on Florida Rough lemon, which were planted in the citrus orchard among seedling plants of the same variety to produce budwood for future propagation, two died of die-back.

(e) Out of the twenty six 12-year old Parson Brown oranges crown grafted on Waterkloof sweet orange, ten were destroyed due to poor development. Of the remaining sixteen, fifteen produced 4,756 fruits, the highest being 788 on a single plant and the lowest being 13. The preceding year the highest yield figure on a single plant was 317.

(f) Twelve 12-year old Navel orange produced 2,650 fruits.

A fertilizer trial on 5 year old Navel orange grafted on Rough Lemon was carried out. Each plot consisted of 4 plants. There has been no significant difference in the various treatments, as the following figures demonstrated:

<i>Treatment</i>		<i>T₁</i>	<i>T₂</i>	<i>T₃</i>	<i>T₄</i>	<i>Total</i>
Blocks I	...	441	362	411	371	1,555 fruits
II	...	351	340	323	346	1,360 do
III	...	227	422	236	298	1,213 do
TOTAL	...	1,049	1,124	970	1,015	4,128 do
Mean/plot	...	339	374	323	338	
Mean/plant	...	84	93	80	84	

There was heavy drop due to canker.

(g) Yield of 12-year old Valencia and Parson Brown Oranges grafted on Florida Rough Lemon in a fertilizer trial is given below. Each plot consisted of 4 plants. So far there is no significant difference in the various treatments.

<i>Treatment</i>		<i>T₁</i>	<i>T₂</i>	<i>T₃</i>	<i>T₄</i>	<i>Total</i>
Blocks I	...	1,762	883	1,732	1,473	5,850 fruits
II	...	986	1,424	1,303	907	4,620 do
III	...	617	1,652	1,146	793	4,208 do
TOTAL	...	3,365	3,959	4,181	3,173	14,678 do
Mean/plot	...	1,121	1,319	1,393	1,057	
Mean/plant	...	280	329	348	264	

Citrus canker was considerably less in Valencia and Parson Brown as compared to Navel.

(h) There was a serious attack on leaves of all the citrus plants by *Gonipterus scutellatus* but they were easily controlled by Telodrin. A spraying with Auxin H 61 @ 1 cc. per gallon was tried on 12 plants of 6-year old Navel orange in October to control excessive fruit drops, but the treatment was ineffective.

390. Budwood from Empress, Fagan, Djeroek Poenten, Djeroek Garoet, Grapefruit, Navel, Semineole Tangelo and Mineole Tangelo were taken for propagation.

391. Navel oranges were the first to flower. Flowering was late due to late harvest. Flowering was profuse in the beginning of October.

Pineapple

392. Of 3,018 Queen Victoria pineapple suckers planted in April 1965, one thousand and sixty-seven came into bearing. Fruits were harvested from December 1967 to January 1968. Spacing in double rows in 2 ft × 2 ft × 3 ft. One thousand and twenty-one suckers in double rows 2 ft × 2 ft × 4 ft were planted in Field No. 3.

Banana

393. After the destruction of the different varieties of Banana in the collection plots by Cyclone *Denise* on 8.1.66, suckers were replanted and they were in bearing after the normal growth period.

Peach

394. Eight varieties of peach were crown grafted on local peach root stock in September 1967.

<i>Varieties</i>		<i>No. of plants grafted</i>	<i>successful grafts</i>
1. King Edward	...	4	4
2. Angel C.E.S.	...	3	2
3. Florida Crawford	...	5	5
4. Babcock ...	...	4	4
5. Teton de Venus	...	5	2
6. Angel (old) B.E.S.	...	5	1
7. Hall's Yellow	...	4	4
8. Alexander Jewel	...	4	4

All the buds were obtained from Barkly Experiment Station except for Angel which was obtained from Central Experiment Station. Three plants of Nectarine were grafted on local peach stocks.

Persimmons

395. The five introduced varieties of persimmons were making very poor growth. They showed dormancy in winter and shed leaves during April—October. Sprouting started in December. None of the plants produced fruits.

Apple

396. The two Tropical Beauty apple trees were in good shape. The two trees produced 55 and 39 fruits respectively. Fruit drops were less as compared to last year's.

397. The rootstock produced some suckers, from which cuttings have been rooted for future propagation.

Pawpaw

398. Plants in the collection plots which were destroyed by Cyclone *Denise* in January, 1966 have been completely uprooted now. The following varieties have been planted: Wilcox, Reunion and Solo.

Avocado

399. The fourteen varieties of Avocado viz. Fuerte, Areu, Saison, Edranol, Lula, Linda, Itsana, Fairchild, Colinson, Pavenoy, Peterson, Black Round, Booth, and No. 10 planted in 1965 and those whose flowers were removed in 1966 came into bearing in 1967 but there has been considerable fruit drop. A fertilizer mixture of 12:12:20 at 1 lb. per plant was applied to all the 14 varieties in March.

Coffee

400. All the 6-year old Arabica coffee were in bearing 39,080 kgs. of berries, (i.e. approximately 23,500 in number) were collected for propagation.

Grapes

401. Grape variety Citronelle, formerly known as Napoleon Chasselas, introduced from Réunion, which was crown grafted on two strains of Isabelle variety and on variety Couderc were in full bearing. No pruning and training was done. A fertiliser mixture of 12:12:20 at 1 lb per plant was applied in March 1967. A spraying of lead arsenate was made for the control of insects.

Strawberry

402. The five varieties introduced from Kenya in viz. Cambridge Rear-guard, 1-4, 1-8, 1-16, 1-17 and the Local Small were maintained. The incidence of fruit rot was much less than last year. The problem of pests like birds was also less as fishing nets were spread over the plants.

GRASS AND FODDER

Elephant Grass

403. A fertilizer trial was laid to study the effect of frequency of nitrogen application (300 kgs. of Sulphate of Ammonia per acre per year) on yield.

(i) T_1 = 50 kgs. after each cut (6 cuts).

(ii) T_2 = 75 kgs after each cut (4 times a year—last week of November, February, May, and August).

(iii) T_3 = 150 kgs. twice a year—last week of February and August).

404. The design was laid out in randomized blocks with 4 replicates. Size of plot was 1/33 acre. Sections of stems were used as planting materials. The cuttings were planted in furrows 3 ft. apart. 100 kgs. of Triple super phosphate were applied at planting. The total yield of each treatment over a year was as follows:

$$T_1 = 81.2 \text{ Tons/acre}$$

$$T_2 = 69.5 \text{ Tons/acre}$$

$$T_3 = 55.3 \text{ Tons/acre}$$

$$\text{L.S.D. at } 5\% = \pm 11.6 \text{ Tons/acre.}$$

Setaria

405. A spacing trial on selected *Setaria* from Curepipe was planted in 3 replicates in early April 1967. The treatment failed to reach 5 per cent significance level. Yield figures for seven cuts for the year from 18.1.67 to 12.12.67. were:

Spacing		Yield of fresh matter in tons per acre
12" × 12"	...	56.51
12" × 24"	...	50.81
12" × 18"	...	48.31
6" × 24"	...	46.71
6" × 12"	...	45.00
6" × 30"	...	43.86
12" × 36"	...	43.63
6" × 18"	...	42.95
12" × 30"	...	41.01
6" × 36"	...	40.10

406. The average interval of cuts was between 50—60 days. The rate of fertilizer applied after each cut was 100 lbs of sulphate of ammonia plus 100 lbs of Muriate of potash per acre. Also an annual application of a fertilizer mixture of 12:12:20 @ 150 lbs per acre was made.

407. *Setaria splendida* has not shown any improvement. Even the selected stools propagated vegetatively produced flower stems early and are not leafy enough.

408. *Euchlaena mexicana*, germinated on 24.2.66 from fallen seeds and produced seeds which have been planted at Palmar and La Ferme. The grass is showing good growth.

409. *Brachiara brizantha* did not develop well during winter, but showed good growth in summer after rains. It has been propagated both vegetatively and by seeds at Palmar and La Ferme. Establishment by seed has been poor.

410. Of the different strains of *Eragrostis* introduced, the Ermelo strain No. 11871 and *E. Lehmanniana* show drought resistance. They are growing in interlines of banana and coffee where they have been planted to check soil erosion.

411. All the eight varieties of Ryegrasses have been maintained in the collection plots.

412. Kentucky Blue grass which has not shown any progress so far has been maintained in the collection plots.

413. Collection plots (1/40 acre) of the following grasses were maintained: *Andropogon gayana*, *Panicum maxicum* (Sigor), *Panicum maxicum* var. *Makari kariense*, *P. coloratum* (coloured guinea), *P. maximum* var. *Trichoglume*, *Fataque Madagascar*, *Chloris gayana* (Endebess), *Chloris gayana* (Mabarara), Giant Rhodes, *Setaria* (Bua River), *Tripsachum laxum*, *Brachiaria brizantha* *Brachiaria ruziziensis*, *Pangola*, *Katambora Rhodes grass*, *Cenchrus ciliaris* Mbalamba. *C. ciliaris* (*setigerus*), small plots of *Paspalum notatum* (Bahia grass) and selected Rhodes grass.

414. The following grass and legume varieties were grown in the introduction plots: *Eragrostis* sp. Green panic (*Panicum maximum* var. *trichoglume*), Blue panic (*Panicum antidotale*) Buffel grass (*Cenchrus ciliaris* (U.S.A.): Ordinary Sudan, Sweet Sudan, *Centrosema pubescens*, *Glycine javanica*, Townsville Lucerne, Louisiana White clover, R. H. Lucerne, *Sorghum alnum* (African).

Varieties introduced in 1967 were:

- (i) *Cenchrus ciliaris* (Molopo strain)
- (ii) 2 types of soya for fodder
 - (a) Black seed coat seeds
 - (b) Yellowish brown seed coat seeds.

They were received from Madagascar.

- (iii) *Vigna marina* from Australia. It has been propagated at La Ferme and Palmar. So far it is growing well.

415. The five strains of *Sorghum alnum*—CP 286226, CP 128627, CP 128628, CP 112019 and No. 625 have been destroyed by birds and a very heavy attack of "rust".

416. *Desmodium intortum* has been propagated for seed production. It is a good cover crop and competes well with *Cynodon dactylon*.

Foodcrops

417. 18 varieties of Cassava were planted in a variety trial in March 1967.

418. Two local varieties—Manioc Jaune (from Belle Rose) and Manioc (Rivière du Rempart) were introduced in the variety trial.

Bean

419. 7 varieties of bean were planted in randomised blocks in a variety trial:

<i>Varieties</i>		<i>Yield of Green of pods wt. in tons/ acre</i>
Pioneer	...	3.8
Victory	...	3.5
Haricot rouge	...	3.5
Long Tom	...	3.4
Prolific long podded		3.0
Fin de Bagnole	...	2.9
Golden Queen	...	2.8

Sig. dif/at 5% = ± 0.8 tons/acre

1% = ± 1.1 tons/acre

Onions

420. (a) 3 varieties planted with 5 baskets of FYM+115 gm of triple superphosphate + 115 gm muriate of potash/100 sq. ft gave the following results:

<i>Varieties</i>		<i>No. of plants</i>	<i>Spacing</i>	<i>Yield in tons/acre</i>
Hunter River Brown	...	1,218	6 ins $\times$ 6 ins	5.9
Red Creole	...	1,680	6 ins $\times$ 6 ins	4.6
Early Grano	...	1,218	6 ins $\times$ 6 ins	1.2

421. (a) An onion variety trial was carried out in June 1967. The experiment was done in randomized blocks of 5 plots with 5 replicates. The size of the plot was 1/435 acre and the spacing was 6" $\times$ 4" sown directly in drills. Rate of fertilizer at sowing was 115 gms of triple superphosphate and 115 gms of muriate of potash + 4 baskets of sand per plot.

<i>Varieties</i>		<i>Origin</i>	<i>Yield in tons/acre</i>
Early Grano	...	Israël	14.6
Sharon	...	"	12.5
Haici	...	"	11.5
Haemeck improved	...	"	6.3
Jaune de Mulhouse	...	"	1.3

L.S.D. at 5% = 2.6 tons/acre

(b) Another onion variety trial was carried out in randomized blocks of 5 plots with 5 replicates. The plot size was 1/435 acre with the same spacing as above. The rate of fertilizer applied was 115 gms of Triple superphosphate + 115 gms muriate of potash + 4 baskets of sand + 4 baskets

of manure per bed of 100 sq. ft at sowing. Seeds were sown on 18.7.67. 1½ months later, i.e. in August, 200 gms Nitrate of soda was applied per bed. Transplanting was done on 26.9.67:

<i>Varieties</i>	<i>Origin</i>	<i>Yield in tons/acre</i>
Sharon	Israël	8.4
Early Grano	"	7.1
Haici shiro	"	6.6
Haemeck	"	2.9
Jaune Paille Devertus	"	1.9

L.S.D. at 5% = 1.5 tons/acre

Sweet Potato

422. A variety trial with a spacing of 2½ ft and 3 ft on mounds was carried out in May 1967. The experiment was carried out in randomized blocks having 2 replicates of each spacing. The size of the plot was 1/46 acre.

423. The yield has been as follows:

<i>Varieties</i>	<i>Spacing (3 ft)</i>
Patate Rouge	6.8 Tons/acre
Violet	6.4 "
Joes	2.9 "
Pelican Processor	2.3 "
Mirebelle	2.0 "
White	1.3 "
<i>Varieties</i>	<i>Spacing (2 ft)</i>
Violet	5.2 Tons/acre
Patate Rouge	4.5 "
Joes	2.6 "
Pelican Processor	2.3 "
Mirebelle	2.1 "
White	1.2 "

P at 5% = ±1.3 tons/acre

Sunflower

424. A variety trial was carried out in October in randomised (split plot design) with 4 replicates of 6 treatments each and each treatment was split into 4 sub plots, each of which represented one variety. The size of the plot was 1/24 acre and that of the sub plot was 1/96 acre. The rate of fertilizer applied was 12:12:20 @ 100 kg/acre and a month later a top dressing of 250 gm of sulphate of ammonia/plot was applied. The experiment failed because of 50 per cent of the crop was attacked by soft rot and also because of very heavy attack of birds.

425. The following vegetables were grown for seed:

Groundnut, maize yellow (local), Brede de Chine, Baton Blanc, Boklah, Salsify, Carrot Chantenay, Leeks, Beetroot, Petsai Distins, Squash Golden, Peas Local, Calebasse Natale, Tomato Marglobe, Cucumber white, Cabbage local, Chillies Cipaye, Lettuce Reine de Glace and Cowpeas Chinese.

PLANT INTRODUCTION

426. The following introductions were made:

- (1) From South Africa—*Cenchrus ciliaris* molopo strain.
- (2) From Reunion—Pepper cuttings (13 units sent to Barkly Experiment Station) Vanilla cuttings (20 cuttings sent to Barkly Experiment Station for propagation); Lentils (about 3 lb sent to Central Experiment Station and Plaisance).
- (3) From Beau Champ (Mauritius)—Water melon (red flesh).
- (4) From Madagascar—maize, soya fodder two types: black seed and yellowish brown seed (120 gms of each sent to Central Experiment Station and Plaisance).
- (5) From Australia—onion seeds of Hunter River Brown and Early Grano.
- (6) From Kirchof Co. Johannesburg—onion seeds of Red Creole (100 lbs sent to Barkly Experiment Station).
- (7) From Northern Ireland—potato seeds of the following varieties: Maris Peer, Ulster Torch, Ulster Supreme, Arran Banner, Alpha 2 cwt. of each variety were sent to Curepipe for planting at Plaisance).
- (8) From West Indies—Yams Oriental, Seed Top and Barbados Yam two tubers of each were planted at Central Experiment Station and the rest to Barkly Experiment Station).
- (9) From Israel: onion seeds—Haemeck Improved, Early Grano, Haici Shiro Improved and Onion Sharon.
- (10) From Australia: Fodder Species—*Vigna marina*.
- (11) From South Africa: Sunflower G.O.R. 101, G.O.R. 104, Maize SA4, S.A. 100 and G.S. 101.
- (ii) Groundnut seeds—Natal common
- (12) From Sarawak—Chang Kok manis (vegetable spinach)—it has failed to germinate.

LA FERME

427. At La Ferme the observation plots of various grasses and the established plot of Pangola was maintained. The Pangola grass was twice destroyed by fire for the first time on the 11th of July, 1967 and for the second time on 9.10.67. The grass was re-established and has grown very well. A fertiliser mixture of 12:12:20 at the rate of 150 lbs/ac. was applied in March.

428. About 250 tons of fodder was supplied to 127 cowkeepers of Bambous, Palma, Bassin Road and La Ferme.

429. Further clearing of land and planting of Pangola and other grasses viz. Rhodes grass, *Panicum maximum* sigor, Fataque Madagascar, *Cenchrus ciliaris* Molopo, Elephant grass, *Cynodon plectostachus* and *Vigna marina* were continued. The following varieties of acacia were planted for separating the grass plots: Peru, Guatemala, El Salvador, Hawaii and Bald Hills. These plants did not develop very well because of excessive moisture.

PALMAR

430. At Palmar 7.55 acres were cleared and acacia seeds were sown broadcast in mid October.

431. The sixty acres of Pangola on sand was maintained. Grazing was discontinued as the grass was being destroyed through overgrazing. A total of 7.38 acres had been grazed. Cuttings were made both by hand and mechanically by an autoscythe. Weeding was carried out and a fertiliser mixture of 12:12:20 @ 150 lbs/ac. was applied in January 1967.

432. Seeds of *Vigna marina* were sown in the nursery. Its growth has been satisfactory.

433. *Cenchrus ciliaris* (Molopo strain) was sown both in the sandy area and the red soil area and has fared very well.

434. *Brachiaria brizantha* which was sown both in some strips of sand and a small plot in the red soil area has not established itself.

435. Propagation of *Eragrostis curvula* has ceased as its yield is not satisfactory.

436. Rhodes grass which was broadcast in the red soil area has started making good growth.

437. Bahia grass (*Paspalum Notatum*) Pensacola strain, which was vegetatively propagated in the nursery has died up to about 75 per cent, which seems to indicate that it is not drought resistant.

438. Of all the legume species which have been introduced, only Clover, Lucerne, Glycine Javanica and Centrosema have survived and are showing good growth.

439. *Desmodium intortum* and Lucerne African (Israel) have grown well and their seeds are ready to be collected for further propagation.

440. *Onion*—March sets of the following varieties:

Bombay Large Red and Red Creole were sown for seed production on 23.10.67. Six beds have been harvested. Seeds were both broadcast and sown in drills. Triple superphosphate and muriate of potash were applied at time of planting.

441. *Coconut*—274 seedlings of Malayan Dwarf (green variety), 155 seedlings of Malayan Dwarf (Yellow variety) and 150 seedlings of Malayan Dwarf (Red variety) were planted in April, 1967 in various paddocks.

BARKLY EXPERIMENT STATION

Development

442. The programme of development work which started in 1966 was completed early this year. The construction of a new sale building was terminated.

443. An air conditioning unit which it was proposed to instal in the extension seed store built in 1966 could not be purchased for lack of funds.

444. About 4,800 square feet of existing roads were rolled and partly tarred.

Seed Production

445. (a) Some 8,540 kilos of vegetable seed materials were processed to a final weight of 4,400 kilos of clean seed. Nearly thirty acres of land were devoted to the production of vegetable seeds.

(b) Strains of the following varieties of eggplant were selected and to ensure trueness to type they were grafted on "anguive marron" rootstocks (*Solanum torvum*) for the purpose of seed production: *Cipaye carri*, Cipaye Narain, Farcie Rosita.

(c) Pure line selections of the following varieties of dwarf bean were carried out during the year. Pioneer, Long Tom, Golden Queen and Prolific. It is intended to carry out similar selection on two other commercial varieties, Victory and Local red, next year.

446. The value of plants and seeds sold to the public and issued free to Government institutions for the last three years was as follows:

			1965 Rs	1966 Rs	1967 Rs
Sale of seeds	...	...	36,849.81	36,864.28	30,564.59
Sale of plants	...	...	34,684.61	35,239.50	35,741.30
TOTAL	...	...	71,534.42	72,103.78	66,305.89

447. The drop in the sale of seed was due to a shortage in the supply of beans and peas.

Citrus

448. (a) About 3,500 rough lemon rootstock were shield budded with varieties of orange and mandarine for sale to the public. But a fair number of successfully budded plants were lost before reaching transplanting age. An FAO citrus consultant who was in the country at the time, attributed those losses to an infection of the *Diplodia fungus*. Losses, mainly due to this cause, as high as 25 to 30 per cent were recorded in certain sections of the nurseries.

(b) The oranges of the previous year's crop were harvested during the months of April to June. The fruits were rather poor in quality and flavour.

449. The orange plants which were about six years old this year, were carrying a good crop. Spraying was done regularly and until the end of the year there was little canker infection on either fruits or leaves. Towards the close of the year, Streptocyclin, an antibiotic was sprayed on orange plants in observational plots for comparison with the copper oxychlorides normally used for the control of bacterial canker. It is too early to give the results of the observations as only one spray of the antibiotic was done by the end of the year.

- (c) During the months of June and July, an FAO citrus consultant, Dr. S. Moreira paid a number of visits to the orchards and nurseries of the station. Strong infection of tristeza on severely dwarfed six-year old grafted March grapefruit plants and greening, another virus disease, on six-year old local mandarine seedlings were pointed out. Infection with the psorosis virus disease was also shown on budded orange varieties Navel and Parsons Brown in the nurseries.

450. The following varieties of citrus and citrus relatives, a tentative classification of which is given below, were introduced to the station by seed from Brazil by Dr. Moreira early in June:

I. Sweet Orange (*Citrus Sinensis* L)

- (i) Normal Group: (1) Hamlin (2) Valencia
- (ii) Navel Group: (3) Bahianinha (Little Bahia)
- (iii) Others (unclassified): (4) Barao (5) Peralima.

II. Mandarine and Tangerine Orange (*Citrus reticulata* Blanco)

- (i) Satsuma group: (6) Owari (7) Wase
- (ii) Mandarine Group: (8) Mexerica = Mexdo Rio (Willow-leaf), (9) Oneco
- (iii) Tangerine Group: (10) Campiona (11) Cleopatra* (12) Cravo (13) Mel (14) Ponkan (Chinese Honey Orange) (15) Swatow (16) Sunki*
- (iv) Mandarine/lime group: (17) Rangpur lime* (Lima Cravo)
- (v) Mandarine group hybrids: (18) Mineola Tangelo (19) Orlando (Lake) tangelo (20) Pina tangelo (21) Wilking (22) Bahiacravo.

III. Hybrids

- A. Citranges (*Poncirus trifoliata* × *citrus Sinensis*) (23) Morton* (24) Rusk* (25) Troyer*
- B. Tangelos (*Citrus reticulata* × *Citrus paradisi*): Mineola, Orlando and Pina (see Section II (v) Nos. 18, 19 and 20).
- C. Tangor. (*Citrus reticulata* × *Citrus sinensis*) Bahia-cravo? (see section II (v) No. 22).

IV. Citrus Relatives

- A. Kumquats (*Fortunella spp.*): (26) Meiwa (large round) (27) Nagami (oval).
- B. Poncirus: (28) Trifoliolate orange* (*Poncirus trifoliata*).

451. Part of the seeds of the varieties marked with an asterisk was Planted at Richelieu Experiment Station for propagation. Otherwise, all the seeds were sown at Barkly Experiment Station on beds treated with methyl bromide. Germination has been fairly good on the whole.

Coconuts

452. There has been no importation of seed of the Malayan Dwarf coconut this year as nuts were becoming available locally for the first time from established plants at the Plaisance Experiment Station. A limited number of nuts were sown this year, but it is expected that it should be possible in future, to rely entirely upon local source to meet the yearly requirements of seedlings for sale to the public.

*(NOTE: Asterisks indicate the varieties intended for use as rootstock).

Letchi

453. The letchi crop has been very poor this year and was estimated at 20,000 fruits.

Other Orchard Crops

(a) *Peach*—(i) Observations on the peach varieties grafted *in situ* last year as well as those established previously were made in order to assess their potential and their adaptability to this area. It is still early to make recommendations but the following summary of the observations may be given for guidance.

<i>Variety</i>	<i>Cropping</i>	<i>Eating quality</i>	<i>Remarks</i>
1. Teton de Venus ...	Good	Good	Quite sweet and juicy. Tendency for "teton" to shrink and rot before rest of fruit is ripe, is a disadvantage.
2. Hall's Yellow ...	Fair	Fair	Firm rather dry and slightly bitter-suitable for cooking.
3. Alexander Jewel ...	Poor	Rather poor	Not very juicy or sweet.
4. Angel ...	Poor	Very good	Sweet and very juicy. Has particular tang.
5. Babcock ...	Very poor	Very good	Very sweet and very juicy. Attractive deep red coloration of skin.
6. Florida Crawford ...	Very poor	Good	Sweet and juicy.
7. King Edward ...	Very poor	Good	Sweet and juicy with bitter after taste
8. Nectarine ...	Good	Good	Sweet and juicy, Fruit small.

(ii) Previous attempts to control fruit flies with insecticides such as Dipterex and Lebaycid have not given satisfactory control. Bagging of fruit with ordinary calico cloth has been found to be very effective.

(b) *Grapes*.—Observations continued on the performance of the white grape variety Citronnelle on its own roots and of the same variety grafted on three stocks. Improved vigour of growth in the grafted plants was already apparent since last year while the growth of plants on their own roots has remained poor. All three stocks used to be equally good. Observations on growth and yield continue.

(c) *Mangoes*.—The crop of mangoes has been very poor due to a severe attack of anthracnose. Several varieties, mainly those poorly represented in orchards of the Division, have been propagated for planting in the collection plot at the Richelieu Experiment Station.

(d) *Pawpaw*.—Fruits of the five strains of the variety Hortus Gold were available for an assessment of quality. The fruits are of medium size, weigh about four pounds on average and have a very smooth golden yellow skin. Fruits of the strains 121/11, 212/6 and 222/17 are fairly sweet and moderately juicy while those of the strains 10/11/13 and 10/20/18 lack sweetness. In addition, the strain 10/11/13 has a strong and objectionable flavour. The fruits of all the strains do not keep well and have to be eaten as soon as they are ripe.

454. Another variety introduced previously from Réunion Island and of which two types exist, were released for sale. The fruits are very large, weigh as much as eight kilos and contain very few or no seed. Eating quality is fair, with a tendency to be watery.

ABERCROMBIE NURSERY

Grapes

455. The following new varieties received in 1965 and planted as cuttings are doing quite well:

(a) Perle de Saba

(b) 204/73

(c) Muscat Hambourg

(d) Cornichon Blanc

(e) Alphonse Lavallée

(f) Citronelle

(g) Alexandrine

(h) Oeillade

(i) Jerusalem

(j) Black Rose (received in 1967 and not doing so well).

456. The varieties (a) to (i) have in addition been grafted on Isabelle Vacoas, Isabelle B.E.S., and Couderc 13 and planted on the Station.

457. The established Napoleon Chasselas vines gave a rather poor crop.

Mango

458. The mango orchard is doing well but suffering from anthracnose attack. Routine spray of bidrin every month is being made. The mango crop was poor. Only about 1900 fruits were harvested. The Maison Rouge and Baissac seeds were sent to Royal Botanical Gardens Nursery for propagation.

Citrus

459. The Citrus orchard at Abercrombie Nursery were not doing well and all the plants were uprooted on 26.10.67 except one plant of Mandarine which was growing well.

460. Cuttings of Mandarine, orange and tangelo of various varieties were grafted on Florida Rough Lemon and a total of 680 were successful. This number was available at Abercrombie Nursery to be issued to other stations or for sale.

461. Bougainvillea cuttings have been propagated for the Trunk Road.

462. Propagation of plants was continued.

463. Sale of plants to the public amounted Rs 5,432.80.

Royal Botanical Gardens

464. The nursery continued the propagation of plants for sale to the public at Abercrombie Nursery and Barkly Experiment Station.

Rice

465. Rice seeds of Begami variety were sown on 12.8.67 and the seedlings were transplanted on 28.9.67 for observation.

466. Two spacings were used:

20 rows of 10"×4" on a plot of 16½ ft. by 88 ft.; and

43 rows of 9"×9" on a plot of 33 ft. by 88 ft.

467. The rice plants were doing well. Flowering started on 30th October, no lodging was observed. The plants seemed healthy, no pests or diseases being observed. Water was drained off in mid December for harvesting in early January 1968.

Coconuts

468. The Pemba Coconut plantations near the Model Factory suffered severely from attacks by the insect Rhinoceros beetle. All the attacked plants were removed and replaced by Malayan Dwarf Coconut (Yellow). The replacement of attacked plants was still continuing at the end of the year.

Ponds

469. All the ponds were regularly cleared and maintained in good conditions. Three new ponds were being built. It was expected that they would be finished in early 1968.

470. Mango and Litchi crops were very poor as the trees had suffered from cyclone *Gilberte* in January 1967.

471. Seed of various vegetables were produced for cleaning, storage and sale at Barkly.

Citrus

472. Routine spraying of fungicides and insecticides were carried out on citrus plants.

Visitors

473. According to the gate count, 170,000 persons visited the station during the year. The lowest number of visitors being about 4,500 in March and the highest number about 24,500 being in August.

Bois Marchand Grass Land

474. Clearing of land and planting of pangola grass was continued at Bois Marchand. Permits to local cowkeepers were issued for cutting grass at Bois Marchand and Arsenal grass plots.

RICHELIEU EXPERIMENT STATION

Development

475. The reservoir on land acquired from Chebel Sugar Estate with sides 169 ft., 71 ft., 130 ft., 65 ft. depth, 15 ft. (capacity 180,000 cu ft.) concrete floor with two additional silt ponds of 13 ft. × 10 ft. × 8 ft.; a feeder canal; a measuring pond, the fitting of a brass gauge—filter with 10 inch steel pipe outlet and of a 10 inch valve were all completed early this year. The top of the reservoir was fenced on all sides with chain links. In the fence two gates were fixed to provide access to the metal ladders going down the bottom of

the pond. Embankment was set up against the outer walls of the reservoir for consolidation. The embankment has been grassed. The reservoir at Chebel was linked to the existing reservoir on the station and to the 6 inch cast iron main pipe by a 10 inch asbestos cement main, pipe. A pressure maintaining valve 8 inch diameter was fixed at the end of the asbestos main, just before entering the reservoir at the station. The pressure here can be regulated up to 4.7 atmospheres. A meter and a valve at the entry on the station in Block 4 and 6 outlets were also set up in the line. The newly laid system of overhead irrigation with gravity feed water, was put into service since January and has worked satisfactorily. All the mains are under pressure.

476. Road with stone surface has been constructed in Block IV and has been linked to road in Block II. The road has been laid on the track of the asbestos cement main pipe which comes from the reservoir at Chebel through Block IV to join the reservoir at the station.

Tobacco

477. Fumigation of tobacco seed beds with Methyl Bromide under an air-tight plastic cover has become a standard practice at the experiment station. The advantages derived therefrom are: good soil sterilisation, availability of seed beds for sowing 48 hours after treatment, control of weeds and use of the same site of beds almost permanently. Methyl Bromide is used for fumigation of beds each year, at the beginning of the tobacco season. When tobacco seedlings are removed the beds may be used for sowing other crops, viz. vegetables. The beds remain weed free for a long time.

478. Some growers have adopted Methyl Bromide for fumigation of beds. Others make use of Vapam or Unifume (sodium Methyl dithiocarbonate) Others again, particularly growers of air curing tobacco make no use of any fumigant. When no fumigation is practised rotation of nursery seed bed area becomes indispensable.

Release of New Varieties

479. NC. 95, a flue cured tobacco imported from U.S.A., after several tests both at the Experiment Stations and in growers fields was released for commercial planting last year. It has found favour with some growers but Yellow Mammoth is still largely grown. NC. 95 is resistant to the common diseases of tobacco, Black Shank and Root Knot Nematodes. The leaves of NC. 95 are susceptible to wind damage, curing of leaves is easier and gives a superior grade of leaf.

480. Of the air cured tobaccos further tests confirm the superior quality of Burleys over Amarello. For the local market Amarello is largely grown for its yield and ease of curing. Burley Tobacco has a thick midrib which takes longer to cure or dry.

481. In tobacco culture seed beds are all important. To obtain uniform crop on the lands healthy sturdy plants must be produced. At the Station the same site was used for raising beds. The standard size of bed is 25 ft X 4 ft with 3 ft pathways between the rows of beds and 2 ft pathways in the

row of beds. The land was prepared by disc ploughing and harrowing. Beds were raised a foot or so above ground level, Manure was spread on the surface of beds at the rate of 14 baskets per bed. Methyl Bromide was used for fumigation of beds. Sowing took place in February. At time of sowing one kilo of 10:28:14 fertiliser mixture per bed was applied. The following seed varieties were sown: (1) flue cured Tobacco, (ii) hybrids of Virginian Varieties, (iii) newly introduced flue cured Tobacco, (Kutsaga Mammoth) (iv) Fire cured Tobacco (v) Air cured Tobacco and (vi) Turkish Tobacco. Additional seedbeds were sown to supply Amarello seedlings to Tobacco growers should their seedlings fail, as (i) unfavourable conditions were prevailing in the North and North east regions of the island at sowing time (ii) larger acreages were allotted to growers. Protective sprays used were Zineb as fungicide and Aldrin and Rogor as insecticides. Seedlings were put into earth balls before transplanting.

Hybrids

482. Some hybrids (NC 95 flue cured Virginian varieties) of F 1 generation were back crossed to their parents. Selections were made in the F 1 generation and seeds were saved for further tests of the lines. There were wide variations within individual hybrids and a few lines have acquired some degree of resistance to Blank Shank and root knot nematodes.

483. In the first season transplanting was done on the flat in holes. The spacing was 3 ft by 2 ft. Observation plots of eleven varieties of old, recent and new Virginian varieties were planted in a field which previously had carried canes for three years. The varieties were (1) Bonanza (2) Yellow Mammoth (3) Jamaica Wrapper, (4) Vesta 30, (5) NC 73, (6) P.D. 611, (7) P.D. 97 (8) Cokers 187 Hicks, (9) Cokers 156, (10) Cokers 187, (11) N.C. 95. Stand of plants was very satisfactory. Seeds from selected plants were saved for further trial. In the second season the same varieties were planted in a field which had been planted successively to Tobacco during four years except for a catch drop of beans in 1964, and a catch crop of sunflower in 1966. Other varieties planted in the second season were the hybrids of N.C. 95 × Virginian varieties (Yellow Mammoth, Bonanza, N.C. 95 Kutsaga Mammoth). Amarello, Burley, Turkish Tobacco and fire cured varieties, Kentucky 151 and Burley 2 and Cigar variety Havanna. Transplanting was done on ridge made by a Bentall ridger. The top of ridge was not flat enough for holing. A board was fitted and dragged behind the ridger to flatten top of ridge. This was not successful. Further improvement is required to obtain the desirable flat top ridge with this implement.

484. The cultural practices followed in Tobacco fields were (a) Tynes cultivation to control weeds, improve water infiltration and build up ridges. (b) overhead irrigation with sprinkled delivering (1/6 inch.) per hour, (b) topping of flower heads (where no seed is required) (d) Removing suckers.

485. In the first season there was a high incidence of insect pests especially Budworm. These insects feed inside the heart of plants, thus causing damage to the leaves. Strong gust of wind also caused some damage to leaves. In general the stand of plants was good. During the crop cycle, with

the exception of few varieties, disease problems were not serious. Insects were controlled with sprays of aldrin and phosdrin. In the second season the main disease problem was leaf spots caused by frog eye (*Cercospora*).

486. A variety trial of 3 commercial varieties of flue cured Tobacco was planted in randomised block with 4 replicates. The varieties tested were Yellow Mammoth, Bonanza and N.C. 95. The plot size was 1/30 acre. Time of planting was end of first week of April. No significant difference in yield or grades index was obtained.

487. Of the air cured Tobacco two acres of Amarello, including Amarello from seeds which had been saved at growers in Flacq, Rivière du Rempart (Pointe des lascar) and Triolet, and half acre of 3 Burleys (IIA; IIB, and 37) were planted. $\frac{1}{4}$ acre oriental Tobacco varieties Soluk and Samsoun were also planted. A root examination demonstrated that Amarello plants from seeds saved at the Station had less root knots and Black Shank than the Amarello from seeds collected at growers. However Amarello (Flacq) from growers showed less Black Shank than Amarello of the Station.

488. F 1 generations of NC 95 $\times$ Virginian Varieties and reciprocals cross were planted. Visual selection of plants as seed bearers was made. An examination of roots was carried out. Desirable characteristics of plants were very variable. Further test will be carried out to assess yield, grade index and disease resistance.

489. Fire cured variety Madole Kentucky 9 and Kentucky 151 were found susceptible to Black Shank and rootknot nematodes. Plants of cigar variety Havanna, Pennsylvania died prematurely. Rg. another cigar variety showed some resistance to Black Shanks but not much to root knot nematodes.

490. The Turkish Tobacco Samsoun and Soluk made vigorous growth. They were planted in an area where stone heaps were freshly removed. The land was in a high state of fertility. In the second season when planted in a field which had carried Tobacco in the first season both Soluk and Samsoun failed to reach maturity because of diseases.

491. A trial to test the effect of compost on yield was planted in the second season. The variety tested was Yellow Mammoth. The transplants were rather at an advanced stage and planting was late in the season. Growth was not uniform in the plots.

492. Two strains of Maryland Tobacco were introduced during the year. The seeds were sown in the Quarantine Green house at Reduit. Growth was very slow.

Seed Production

493. All seeds of commercial Tobacco varieties for distribution to farmers through the Tobacco Board are produced at the Station. Flowerheads of flue cured tobacco varieties Yellow Mammoth, NC 95 and air cured variety Amarello were bagged after visual selection of plants. Seeds were saved from plants which on root examination showed some resistance to diseases.

494. Seeds were also saved from plants of other introduced varieties and from crosses made at the Station for further tests.

495. One acre of Yellow Mammoth and one acre of NC 95 were planted for seed production as well as two acres of Amarello including Amarello from seeds collected from selected plants at growers in Flacq, Rivière du Rempart (Pointe des Lascars) and Triolet.

Curing

496. Gas oil curing, with Nu-oilmatic curer, was carried out for all the Virginian Tobacco leaves. Barn used is 16 ft×16 ft with 9 tiers high. The barn is made of bricks with gable roof covered with corrugated iron sheets. Top ventilators are provided on the roof and rectangular ventilators at the bottom. The walls are painted with bituminous aluminium paint.

497. The ripe leaves are collected on one arm and deposited at the end of the row in heaps. These are then lifted, loaded in a trailer and transported to stringing shed, unloaded, and placed standing on butts. Then their leaves are picked for stringing. With this practice there is much handling of leaves and thus damage to leaves before curing is inevitable. When the leaves are strung on stichs the barn is loaded from top down to the bottom tiers.

498. At curing, colouring of the leaves start with closed ventilators from atmospheric temperature to 95°F. In some curing, wilting the leaves for colouring was practised. The result obtained in the latter case was very satisfactory.

Groundnuts

499. Nine varieties of groundnuts were planted in a variety trial for assessment of yield and oil content. The design was randomised blocks with 4 replications. Plot size was 1/97 acre. Planting distance 3 ft×1 ft. The field had previously been planted to tobacco. Fertiliser applied at time of planting was 100 kgs Super Phosphate + 100 kgs Sulphate of Potash. 100 kgs of Ammonium Sulphanitrate 26 per cent N was applied at first cultivation. Growth was uniform. Date planted 3.10.66 and date harvested 23.2.67.

500. The yield is listed below.

		<i>Air dried shells lb/acre</i>	<i>Kernels % shells</i>	<i>Oil content % kernels</i>	<i>Total oil lb per acre</i>
1. Virginia Bunch Improved	...	3970	75	41.8	1244.6
2. Beit Dagan	...	3410	75	40.7	1040.9
3. NC 2	...	3780	70	42.2	1116.6
4. Tennessee Red	...	2480	70	42.8	742.9
5. Spantex	...	3760	77.5	41.3	1203.4
6. Dixie Spanish	...	3940	77.5	44.1	1346.6
7. Starr	...	3680	77.5	40.7	1160.8
8. Argentine	...	3940	77.5	40.0	1221.4
9. Local Cabri	...	4180	75	39.9	1250.9

L.S.D. at P.O. 05 = ± 830 lb per acre

Sunflower

501. In early March Sunflower variety Hazera (Israel) was planted with seeds sown in rows 3 ft apart. Seed rate at 17 lb/acre. Half of the field was not thinned and half was thinned at 2 plants per hole at every one foot. Fertiliser applied was 100 kgs of complete mixture 12:12:20. In the area thinned there were plants mostly with single flowerheads. The diameter of flowerheads in the area not thinned was between 2 ins to 4 ins and that of flowerheads in the thinned area was between 5 ins to 7 ins. The seed yield in the area not thinned was 1,012 lb per acre and in area thinned to 2 plants at 1 ft was 926 lb per acre.

Sugar cane

502. Varieties grown: M253/48, M147/44, M93/48, M442/51, M202/46.

503. 1237 tons were harvested from 33 acres. The average yield was 37.5 tons per acre. The cane field with inter cropping with maize or Sunflower did not indicate any unfavourable influence on yield.

Orchards

504. Maintenance work was carried out in the 2-year old and 9-year old citrus orchards composed of Marsh Grape fruits grafted on Florida Rough Lemon; ungrafted Java Grapefruits, Vangasailles, Waterkloof sweet orange, Florida Rough lemon, Semineole Tangelo, Mineole Tangelo; Orange varieties, Parson's Brown Navel, Valencia and Navalencia; and local mandarines.

Banana

505. A spacing and suckering trial with variety Naine was planted in mid July. There are three (3) Spacings (a) 6 ft x 6 ft (b) 7 ft x 7 ft (c) 8 ft x 8 ft with 3, 4 and 5 plants per hole. There are 4 replicates. At time of planting 2 baskets of manure and one pound of complete fertiliser 14:14:14 were added to each hole planting was done with one plant per hole.

506. The F.A.O. citrus specialist Dr. S. Moreira pointed out the symptoms of Tristeza with stem pitting on Marsh grapefruit and symptoms of "greening" on Vangasailles and oranges.

507. Fruits of Florida Rough Lemon were collected for seed production.

508. New Citrus seeds from Brazil were introduced by Dr. S. Moreira. Some of the citrus seed proposed to be used as stock and of the following varieties were planted at Reduit Experiment Station:

- (1) Sunki tangerine
- (2) Troyer citrange
- (3) Rusk citrange
- (4) Cleopatra tangerine
- (5) Trifoliata orange
- (6) Morton orange
- (7) Rangpur lime

509. The seeds were sown on beds fumigated by Methyl bromide. Germination was good except for Morton Trifoliata oranges and Rusk citrange.

Mango Orchard

510. The mango orchard of Maison Rouge, of grafted mixed varieties and of stock varieties were maintained. Routine cultural practices were followed viz: application of fertiliser, irrigation, weeding around plants, and protective sprays of fungicides and insecticides. Main insect pests were leaf eating weevils; gall midge and trunk borer. Bearing of fruits was very poor during this year.

Litchi

511. The litchi orchard planted to provide materials for propagation was maintained. Growth has been satisfactory. Production of fruits was very poor for the year.

Grapes

512. The abandoned plots of grapes variety, Napoleon Chasselas grown on its own roots and grafted on three stocks viz: Couderc 13, Isabelle Vacoas and Isabelle Barkly were restored. The plants were pruned and trained on trellis of horizontal stretched wires set on a rectangular mounted frame seven feet high. The main trunk below the top vines is kept clean of bud growth. Each plot consists of two plants trained on one trellis. There are four replicates. The plants are in good shape.

Livestock

513. (a) The practice of rearing heifers, obtained from Livestock Breeding Centre, to calving stage was continued. The animals are sent back to the Breeding Centre for calving. Fresh lots of heifers are received in return to continue the process.

(b) Progenies of the Rodrigues breeds of poultry hens were maintained without further feed trial.

Rice

514. In November two varieties of rice (a) Begami (Pakistan variety) (b) Local variety (Mare Choisy) were sown on beds in rice ponds. The Agrosan treated seeds were first soaked in water for 24 hours and were then allowed to germinate on moist gunny bags during 48 hours. These pregerminated seeds were then sown broadcast on beds which had been flooded with water. At sowing, beds were kept saturated with water. As the seedlings grew, the water level was increased gradually and kept at about 2 inches at all times of growth till transplanting. Seed rate for one bed of 100 sq. feet was 375 grams. The fertiliser mixture applied at sowing was half kilo of each of the following S/Ammonia, Triple Superphosphate and Sulphate of Potash for each kilo of rice seed sown.

515. Some beds were sown with seeds direct without pregerminating. Same seed rate of 375 grams per bed of 100 sq. ft. was used. Sowing was made in drills 4 ins apart and the seeds were covered with soil. There was no difference in germination. The seedlings were thick in drills,

516. 155 beds of 100 sq. ft. of variety Pakistan (Begami) and 117 beds local variety Mare Choisy were sown. Seedlings from 63 beds of Pakistan (Begami) variety were used to plant 4 acres of land at Yemen. Seedlings from other beds were made available to Curepipe, Pamplemousses, Central Experiment Stations respectively. The seedlings were just one month old when they were uprooted for transplanting. During one week the operation of transplanting at Yemen was carried out. Transplanting was done at 9 ins $\times$ 9 ins.

517. After sowing, the local variety (Mare Choisy) was given two treatments: seedlings were transplanted to other beds while part of the seedlings were left *in situ* to compare the yield of transplanted plants with direct sown plants.

518. Growth was very luxuriant in both varieties.

Yemen

519. Arrangements were made for planting rice on 4 acres of land at Yemen Estate. The land previously under canes was terraced along contour. On 11.11.67 rice seeds, variety Begami, were sown on beds at Richelieu Experiment Station. The seedlings were transplanted at Yemen on 11.12.67. Three quarters of an acre was damaged by stags. Harvest started on 28.2.67. Rainy conditions delayed harvest, resulting in much shattering of grains. There was also a fair amount of damage caused by birds. The effective area harvested was 3.27 acres. The yield obtained was 4.370 metric tons at a moisture content of 9.3 to 14 per cent amounting to 1.34 metric tons of paddy per acre. The cost of production, at Rs 838.32 cs. per ton of paddy, was high as land preparation was difficult due to a 15 ft. drop from the top to the bottom part of the field.

XVIII. Plant Pathology

TOBACCO

520. Brown leaf spot of tobacco, *Alternaria longipes*, was present in most of the second season Amarello plantations from last year which survived an early cyclone. Some plantations were abandoned and many were still standing when the first season Virginia and the Amarello of this year were maturing. Although the Virginia was not affected owing to the cooler and drier weather, Amarello grown in close proximity to last year's plantations was affected later and some plots were again abandoned or uprooted early. *Alternaria* appeared in the second season Virginia at Etoile in December but did not cause much damage in spite of heavy early summer but did not cause much damage in spite of heavy early summer rains as the crop was nearly completely harvested before Christmas.

521. Some frog eye, *Cercospora nicotianae*, occurred in a few plantations, but there was rather more barn spot. Plantations were generally free from powdery mildew, *Erysiphe cichoracearum*, and there was very little mosaic or other virus diseases.

522. Some root-knot nematode, *Meloidogyne* sp., and black shank, *Phytophthora parasitica* var. *nicotianae*, damage was observed in one plantation of NC 95 at Belle Mare on land that had carried tobacco last year, while another plantation of the same variety following fallow was quite healthy.

523. Several cases of accidental damage from weedkillers occurred through faulty labelling of containers of agricultural chemicals or use of contaminated sprayers.

TEA

524. In February, young tea plants and seedlings at Caneliere, Dubreuil, Rivière du Bois and Devoyenne nurseries showed infection by brown blight, *Colletotrichum camelliae*, resulting in a severe defoliation of seedlings. A similar occurrence of the disease had previously been reported in 1959. The fungus is known, to be a weak parasite, liable to cause a blight on plants not growing under optimum conditions and suffering from physiological disturbances. In some localities at Dubreuil and Rivière du Bois, the waterlogged condition of the soil was apparently the cause of the poor condition of the seedlings. It is also suspected that in some of the newly established nurseries, the bulldozing operation for the preparation of the seed beds may have resulted in the removal of significant amounts of top soil and nutrients.

525. The condition of the cleared land in most of the newly claimed areas was unsatisfactory from the plant health point of view. A survey of tea plantations was performed in March and dead stumps and pieces of roots, some more than 2 feet long, were found both at soil level and underground and large enough to develop fructifications of *Ustilina zonata*. It cannot be overemphasized that since tea plantations are a long term investment, land prepared for the crop, must be very carefully cleared of all pieces of stumps, roots and branches.

COFFEE

526. Coffee berry disease, *Colletotrichum coffiarum*, was the major disease on the newly introduced varieties at Reduit with symptoms on leaves and fruits.

527. A fungicide trial was carried out at Reduit with copper oxychloride and Dithane M/45. Neither of the fungicides controlled the disease satisfactorily.

528. Root disease, *Armillariella mellea*, was recorded for the first time on coffee in a plantation of Floréal.

POTATO

529. Potato blight *Phytophthora infestans* was not very severe in 1967. The varieties cultivated: Up to Date, King George and Delaware being susceptible, the disease prevailed from April to November, causing some reduction in yield in several localities. In June, powdery mildew, *Leveillula taurica*, was unusually common on the potato variety Alpha, recently introduced from Norway, in a trial plot at Plaisance.

530. Potato seed piece rot, originating from contaminated tubers and caused by bacterial soft rot organisms and *Fusarium* spp., was frequently reported during the year from many localities such as Petite Rivière, Arsenal, Rivière des Anguilles, Plaisance, Vacoas, Cressonville, Roches Brunes and Cottage during rainy periods. Badly healed seed pieces are liable to be more susceptible to invasion by bacterial soft rot and *Fusarium* spp. from the soil resulting in poor stands. It was therefore recommended that cut seed potatoes be allowed to heal for at least a week instead of 48 hours before planting.

531. In January, "spraying" symptoms occurred on potatoes harvested at Chemin Grenier, which, when cut, showed reddish wavy flesh lesions. Internal Rust Spot of the flesh occurred in December. The causes of these diseases are still unknown. The lesions present at the time of digging do not increase much in storage.

532. Virus diseases of potato were not of economic importance during the year. Leaf roll occurred on the variety Up to Date. A mild infection of about 5 per cent was recorded at Piton in June.

533. A severe leaf spotting suspected to be of virus origin again occurred on the variety Parnassia at Curepipe Experiment Station. Tests for Tomato spotted wilt virus gave negative results.

534. A fungicide trial against potato blight with Dithane M/45, Difolatan and the new fungicide ZMC 5 at 2 grams per litre was carried out at Vacoas Demonstration Centre. Six sprays were applied during September and October at weekly intervals. Both M/5 and ZMC 5 controlled the disease more satisfactorily than difolatan. The crop was so severely infected with bacterial wilt that yields were insignificant. The trial will be repeated in 1968.

535. Potato plantations of the variety Delaware were infected with *Alternaria solani* at the end of the year. The disease was however controlled by M/45 sprays at Arsenal and Mapou.

MAIZE

536. Recently introduced varieties of maize from Israel, and one from Madagasikara showed more susceptibility to leaf spot, *Helminthosporium turcicum* and rust *Puccinia polysora* than the local variety. The disease was unusually very severe at Reduit in May owing to a rather prolonged rainy season.

RICE

537. A preliminary survey of rice plantations carried out at Pamplemousses, Choisy, Flacq, Yemen and Flic en Flacq showed that both the Pakistan variety and the local Mare Choisy variety were free from major diseases. In March, *Helminthosporium* sp. occurred on glumes at Choisy, and *Curvularia* sp. also occurred on glumes at Pamplemousses. Chlorosis of seedlings at Centre de Flacq and Arsenal was attributed to nutritional deficiency.

WHEAT

538. A wheat plantation at Centre de Flacq demonstration centre was severely infected with a virus disease suspected to be Striate Mosaic. The matter was brought to the attention of the Plant Importation and Quarantine Standing Committee who recommended that the public and all concerned be informed of the dangers involved in planting seeds imported for consumption.

SUNFLOWER

539. A preliminary survey of sunflower plantations was carried out during the year. The main disease recorded in the wetter localities particularly in winter was found to be stem and head rot caused by *Sclerotinia sclerotiorum*. Bacterial wilt, *Pseudomonas solanacearum*, occurred generally on sunflower but was not very severe during the year except in heavy contaminated soil at Reduit. A virus disease with mosaic symptoms was observed for the first time on the crop at Plaisance and Beau Plan. Rust, *Puccinia helianthi*, occurred in most localities during summer months but caused little concern.

TOMATO

540. The major tomato disease in the Northern districts was grey leaf spot, *Stemphylium solani*, which was satisfactorily controlled in the fields with Dithane M/45 or Maneb sprays. Grey mould, *Cladosporium fulvum*, and powdery mildew, *Leveillula taurica*, were of lesser economic importance. A fungicide trial was carried out at Arsenal during September when the three diseases grey leaf spot, grey mould and powdery mildew were present in the fields. The fungicides tested were M45, Maneb, Difolatan, Captan and Karathane. Motorised Knapsack sprayers were used and the dosages for a medium volume of 50 gallons water per acre were: M45, Maneb, Difolatan, Captan-3 lbs, Karathane 1 lb. Mean yields per 100 plants were as follows:

Plot A: Maneb only	...	...	30 kgs
Plot B: Difolatan + Karathane	...	...	47 kgs
Plot C: M/45 + Captan + Karathane	...	...	60 kgs

At Barkly Experiment Station, a latin square with 16 plots and 4 replicates was laid out to test M/45, Difolatan, Anthracol and ZMC5 against blight, *Phytophthora infestans*, and *Stemphylium* on tomato. The percentage of plants which died from bacterial wilt was unfortunately so high that yields could not be assessed with any reliability.

GROUNDNUT

541. A fungicide trial was carried out at Réduit in March to control groundnut leaf spots, *Cercospora arachidicola* and *C. personata*, with Dithane M/45 and Difolatan both at 2 grams per litre. The spots caused defoliation and no differences in yield were observed:

Plot A. M/45	...	12.2 kg.
Plot B. Difolatan	...	12.2 kg.
Plot C. Control	...	13.0 kg.

ONIONS AND GARLIC

542. Particular attention was given to onion diseases during the year. A survey was carried out during the year and two diseases previously unrecorded were identified: Basal rot caused by *Fusarium* spp. which prevailed at Petite Rivière and Black River, particularly in undrained soil and pink root rot, *Pyrenochaeta terrestris*, which was found to be widespread, occurring at Belle Mare, Palmar, Trou d'Eau Douce, Plaisance, Reduit, Rivière des Anguilles, Arsenal, Mapou, Vacoas and Quatre Soeurs. This latter disease has probably been endemic in the soils of Mauritius for a long time. Onion plants are generally not killed outright by the fungus but the size of the bulbs is appreciably reduced. The disease seems to be more virulent in the Palmar area where the crop is grown year after year on the same land. Pink root rot will have to be further investigated.

543. The newly introduced varieties: Hunter River Brown, Hunter River White, Bombay Large Red and Redcliff Brown as well as the Local Red variety were very susceptible. Red Creole which seems to be a heavy rooting type was less susceptible. Downy mildew, *Peronospora destructor*, which although previously recorded had not been seen for many years, occurred in September at Vacoas during a cold wet spell.

544. Onion blast, *Botrytis squamosa*, was responsible for important leaf damage at Vacoas and Reduit during wet conditions. The disease could not be controlled with Maneb sprays.

545. Root-knot nematodes, *Meloidogyne* sp. although more predominant in sandy soils of the coastal areas, occurred at Reduit and Plaisance. Plots suffering from both root knot nematodes and pink root rot, *Pyrenochaeta terrestris*, were noticeably dwarfed and failed to yield a crop in the Belle Mare area in July.

GINGER

546. A leaf spot and blight, already reported in 1966 at Creve Coeur, was widespread during the year and caused some concern notably at Henrietta, La Marie, Quartier Militaire, Les Mariannes, Riche Fond, Beau Bois, St. Julien and Rivière des Anguilles. A yellow bacterium was isolated from the diseased plants but failed to reproduce the disease on inoculation. Leaf material was forwarded to the Commonwealth Mycological Institute for identification by the bacteriologist of the Institute. Again, a yellow bacterium, *Xanthomonas* sp., was isolated but its pathogenicity has not been proved yet.

547. Another leaf spot of ginger caused by *Phyllosticta gingiberis*, a new record for Mauritius, was observed in several localities.

EGGPLANT

548. A virus disease of eggplant, previously unrecorded, with symptoms of necrosis and yellowing of leaves and veinal necrosis, occurred in patches at Trou d'Eau Douce and Palmar in August.

BEAN

549. Mosaic disease of beans, which had not been observed for many years, caused severe damage particularly on the local variety. A survey of this virus disease carried out in June showed as high as 40 per cent infection on the local variety at Petite Rivière and 2 per cent infection on Victory variety at Reduit.

550. Anthracnose, *Colletotricum Lindemuthianum*, was prevalent on susceptible varieties owing to favourable climatic conditions, with symptoms on leaves, twigs and pods. The disease was very severe at Curepipe Experiment Station but also occurred at Reduit and Barkly. The following observations regarding susceptibility and resistance of varieties to Anthracnose were made in May at Curepipe Experiment Station:

Very susceptible varieties ...		Redlands green, Redlands Belle, Superproduction, Fin de Bagnol
Susceptible	...	Deuil Precoc, Pioneer, Prolific, Local Red, Long Tom
Resistant	...	Golden Queen, Victory

551. The varieties Golden Queen and Victory were more susceptible to halo blight. Halo blight was very common during the year in the wetter localities. At Barkly, the attack was epidemic in June when every single pod showed the typical grease spots. At Curepipe and Vacoas infection by halo blight was also rated at 100 per cent. All varieties were equally susceptible to angular leaf spot, *Isariopsis griseola*.

552. A Fungicide trial was carried out at the Plant Pathology Division trial plot, Reduit, to control angular leaf spot, with the fungicide Duter (2 gm/litre). Plot yields were as follows:

Duter: 23.250 kg

Control: 19.00 kg

PEAS

553. Ascochyta leaf spot, *Ascochyta pisi*, was very severe on peas during the year. A plantation at Curepipe Experiment Station was 100 per cent infected during September and failed to yield a crop. A fungicide trial was carried out at the Plant Pathology trial plot, Reduit, to control leaf spot and powdery mildew *Erysiphe polygoni*, with Difolatan, Dithane M/45 and Karathane. Plot yields were as follows:

Difolatan + Karathane	...	10.750 kg
M/45 + Karathane	...	7.000 kg

CARROT

554. A fungicide trial was carried out at Reduit in March to control blight, *Alternaria dauci*, with the following fungicides: Duter, Difolatan, Dithane M/45.

555. The following yields were obtained:

Duter	...	...	10 kgs.
Difolatan	...	...	20 kgs.
M/45	...	...	16 kgs.
Control	...	...	8 kgs.

Duter was slightly phytotoxic.

BROAD BEANS (BOKLA)

556. A heavy infection of blight, *Cercospora zonalis*, was reported at Vacoas and Barkly. The disease under such conditions could not be satisfactorily controlled with Maneb sprays.

CITRUS

557. Dr. S. Moreira, consultant in Citrus production under the United Nations Development Programme, carried out a survey of citrus diseases from May to July and confirmed that Tristeza virus disease was present in Mauritius. Every citrus tree grafted or seedling, carry the virus since the black fly vector is present all over the country. Marsh seedless grapefruit tree were found to be particularly affected. He also identified the following virus diseases for the first time:

- (1) Greening—an insect transmitted virus, which was found in many citrus orchards both in grafted and seedling plants, the most affected varieties being limes, tangeloes, tangerines, although in several instances grafted sweet oranges and seedlings of rough lemon were found to be appreciably affected.
- (2) Psorosis—Bark symptoms were found in some rather older Parson Brown and Valencia orange trees. It is suspected that all Navel, Parson Brown and Valencia orange trees carry this virus.
- (3) Exocortis—week symptoms of exocortis were seen in the branches of some Tahiti lime trees.
- (4) The bud union crease disorder—which may be caused by a virus, affecting all the Tarocco orange trees grafted on rough lemon.

558. Dr. Moreira recommended that the sale of young trees infected with virus disease should be stopped immediately and the use of bud wood from virus contaminated mother trees be discontinued.

559. Although eradication could be the solution to eliminate canker, greening and other virus diseases there are various factors which must be considered before the recommendation for eradication can be implemented.

BANANA

560. Root-knot nematode was recorded on banana for the first time in a plantation at Chemin Grenier. The nematode was forwarded to the Commonwealth Institute of Helminthology and identified as *Meloidogyne javanica*. Cucumber mosaic virus was observed in banana plantations at Plaisance, Le Chaland and Chemin Grenier.

PINEAPPLE

561. Pineapple disease, *Ceratocystis paradoxa* recorded for the first time on the crop in Mauritius, was severe at Riche en Eau in June on newly planted suckers.

562. Heart rot, *Phytophthora parasitica*, caused severe damage at Anse Jonchée and also occurred at Tamarin. The disease occurred in patches and resulted in the death of a great number of plants. A preliminary fungicide trial with Difolatan at 5 grams per litre was carried out in August and September at Anse Jonchée. The effect of the treatment could not be properly assessed as the incidence of the disease became less important in September and was practically absent even in the control plots.

CUCURBITS

563. Squash plantations were severely affected by scab, *Cladosporium cucumerinum*, Anthracnose, *Colletotrichum*, at Curepipe and Vacoas particularly during winter months.

564. A fungicide trial was carried out at Vacoas to Control the three diseases which were present in the field. Four fungicide sprays were performed in September and October with Difolatan and Dithane M/45 at 2 grams per litre, Karathane at 0.5 grams per litre. The following plot yields of marketable fruits were obtained:

Control	...	109 fruits
Difolatan + Karathane	...	163 fruits
M/45 + Karathane	...	138 fruits

CORIANDER

565. Leaf and stem rot, *Sclerotinia sclerotiorum*, was recorded for the first time on Coriander at Barkly in August.

OKRA (LADIES FINGER)

566. A fruit rot reported in the wetter localities was investigated. The disease was found to be caused by the fungus *Choanephora cucurbitarum*, a new host record for Mauritius. In a fungicide trial carried out at Réduit, Dithane M/45 and copper oxychloride sprays controlled the disease satisfactorily.

PLANT INSPECTION AT CUSTOMS AND AIRPORT

567. 1069 Plants import permits and 612 phytosanitary certificates for plants being exported were delivered at the Quarantine Office, Cerné Dock, Port Louis as well as 2987 certificates of examination for articles being imported.

568. 83 fumigation operations were performed at the Fumigation Plant at Fort George and fees collected amounted to Rs 4,503.30.

569. 138 ship arrivals and 714 plane arrivals were attended to.

QUARANTINE

570. The following plants were grown under quarantine:

1. Rice from N.S.W. Australia—YRL 1
N.S.W. Australia—YRL 2
Philippines—IR 8
Philippines—TNI
Guyana S.A.—Blue Belle
Louisiana U.S.A.—Saturn
Brazil—59—1300
Brazil—58—1246
Malaysia—Malinja
Indonesia—Syntha 3523
Madagascar ?
Madagascar—Makalioka.
2. Fodder grasses from Australia—BOORARA BUFFEL
Fodder grasses from Australia—KENNEDY RUZZI
3. Cotton from Israel—2 varieties
4. Tobacco from U.S.A.—Maryland 59
Tobacco from U.S.A.—Maryland 609
5. Pineapple plants from India—Queen type
Pineapple plants from India—Cayenne type
6. Citrus from Sudan-Marsh Seedless

The following were released in 1967:

Tobacco-Rg., Kentucky 9, Kentucky 151, Pash Madole, Havana 142, Burley 2, and Kutsaga Mammoth.

571. The sugar cane quarantine Greenhouse was operated on behalf of the Department of Agriculture by the Mauritius Sugar Industry Research Institute. The forty-three varieties in quarantine, listed in the 1966 report, were ratooned in September and are due to be released in March 1968.

MISCELLANEOUS DISEASES AND FUNGI

Sewell

572. The following were recorded for the first time in 1967:

On artichoke: collar rot, *Rhizoctonia solani* Kuhn.

+ Citrus: fruit rot, *Diaporthe citri* Fawcett. [44]

* Coriander: leaf and stem rot, *Sclerotinia sclerotiorum* (Lib.) de Bary.

Digitaria pentzii: *Mycosphaerella* sp.

Euphorbia sp.: powdery mildew, *Leveillula taurica* (Lev.) Arn.

Gerbera sp.: white rust, *Albugo* sp.

Ginger: bacterial leaf spot, ? *Xanthomonas* sp.

[Ginger: leaf spot, *Phyllosticta zingiberis* Stevens and Ryan.

Ginger: leaf spot, *Leptosphaeria* sp.

Gynandropsis pentaphylla: leaf spot, *Cercospora uramensis* Chupp. and Muller.

- Lagerstroemia flos reginae*: leaf spot, *Cercospora lythracearum* Health and Wolf.
- Latania* sp. root rot, *Thielaviopsis paradoxa* (Des.) Hohn.
- Lentils: leaf spot, *Cercospora zonata* Wint.
- Mucuna benetii*: dieback, *Phomopsis* sp.
- Okra: fruit rot, *Choanephora cucurbitarum* (Berk. and Rav.) Thaxter.
- Onion: pink root rot, *Pyrenochaeta terrestris* (Hansen) Gorenze, Walker and Larson.
- Pinapple: root disease, *Thielaviopsis paradoxa* (Des.) Hohn.
- Pennisetum purpureum*, false mildew *Beniowskia sphaeroidea* Kalchbr. and Cooke), Mason.
- Rice: on leaves, *Leptosphaerulina trifolii* (Rostr.) Petr.
- Rice: on glumes, *Curvularia* sp.
- Rose: on stems, *Gliochadium roseum* Bain.
- Tea: leaf spot, *Glomerella cingulata* (Stonem.) Spauld. and Schrenk.

XIX. Entomology Division

TAXONOMY

573. Numerous identifications were made for officers of Extension Division and planters.

574. At the Experimental Station of Curepipe, rice leaves were found to be attacked by a lepidopterous larva which was later identified as *Crambus* sp. after breeding.

575. Many species of insects have been added to the Museum Collections. The latter are being kept in good order and are invaluable for future identifications.

BIOLOGICAL CONTROL

576. Following the visit of Dr. Legner and joint work carried between the Division of Entomology of the Department of Agriculture and the University of California, it was found that two species of parasites introduced over the past years were unsuited for Mauritius due to high humidity prevailing throughout the year.

577. Arrangements were made to concentrate on various strains of *Muscidifurax raptor* (Large South Western strain, Chilean Strain). Concerning *Spalangia* species, *Spalangia nigra* has been introduced to replace *Spalangia endius*.

578. *Pachycrepoides vindemmiae* being effective against fruit flies is still being reared in the Insectarium for mass liberation.

APICULTURE

579. Close contacts are being kept with Dr. Eva Crane who paid a short visit to Mauritius and made several recommendations which are being followed by private amateurs,

580. Mauritian honey has been declared as a product of high quality capable of being compared with Australian honey and could even find a market in England if produced on a commercial scale.

FRUIT FLIES

581. Attacks of fruit flies on untreated peach were considerably severe in various localities, however at Moka where regular insecticidal treatment was performed attacks were negligible. Fitos was sprayed every 3 weeks.

582. A protein-base bait presumed to be very effective against various fruit flies will be experimented during the course of the year. If results are encouraging as in Israel and Australia, it will be possible to use it on a large scale especially in orchards.

ORYCTES RHINOCEROS

583. At Pointe aux Sables and Trou aux Biches where a programme of plantation sanitation was carried out, recovery of the palms is satisfactory.

584. *Pheropsophus sibirinus* was not recovered this year so that it is thought that this predator has not adapted itself to local conditions. On the other hand *Scolia oryctophaga* Coq introduced from India and now abundant in the Southern region of the Island, seems to have adapted itself to some areas, in the North.

585. Dr. Bedford who visited Mauritius to search for *Oryctes* predators is keeping us informed on the possibility of new predators from other sources.

POTATO TUBER-MOTH

586. The worst pest in Mauritius was the potato tuber-moth *Gnori-moschema operculella* Zell. (Lepidoptera). In some localities infestation was severe. At the Marketing Board where most of the potatoes were stored after harvest, the pest did a lot of damage. To reduce reinfestation, fumigation using pyrethrum, DDVP. fog oil was done on a regular basis. Though results were satisfactory, it is hoped that the new Marketing Board Cold Storage installation will soon be ready and damage to stored and un-attacked potatoes will be less for the next crop.

HELIOTHIS ARMIGERA

587. Attacks of this pest were few except in tobacco leaves possibly through reduction of population brought by *Ecphoropsis perdistinctus* Vier and *Drino imberbis*.

BIOLOGICAL CONTROL OF WEEDS

588. Parasites of *Lantana* spp. namely *Diastema tigris*, *Syngamia haemorrhoidalis* were liberated at various points of the Island. At Morne, Grand' Baie defoliation of the weed was considerable.

PESTS OF CROPS

Sunflower

589. Although this plant is reasonably free from pests, attacks by a dipterous insect were reported in the District of Flacq. This insect which was suspected to belong to the genus *Melanoagromyza* had been sent for identification. Bidrin at the rate of 2 c.c. per litre of water gave good results.

590. Seeds just before harvest were attacked by *Heliothis* larvae. Application of Phosdrin controlled the pest.

Pineapple and Groundnut

591. *Dysmicoccus brevipes* Cockerell, a mealy bug of pineapple, caused severe damage at Anse Jonchée. The pest was brought under control by using Phosdrin.

592. The leaf tier *Nacoleia praeteritalis* was one of the most important pests of groundnut and caused trouble at St. Pierre, Beau Plan.

593. Orthodibrom, is the best pesticide treatment against this pest. Experiments are under way with Lannate.

Citrus

594. The white fly, *Dialeurolonga simplex*, and *Toxoptera citricidus* Kirk, the citrus aphid, were very abundant on Citrus leaves. Chemical control with Phosdrin followed by Bidrin gave very good results.

595. Greening, a virus disease apparently transmitted by the psyllids *Trioza erythredae* and *Diaphorina citri* caused severe distortion of leaves in many citrus orchards.

596. A research on parasites of several pests of citrus was undertaken by the Entomologist while he was on mission in Madagascar, but this is a long term work which will have to be repeated over the years to come.

Coconut

597. *Oryctes rhinoceros* remained one of the major pests of coconut, especially in the North. All accessible coconut palms in the Northern regions of the Island and at Pointe aux Sables were treated with granular Dipterex 2.5 per cent. BHC 2 per cent being a cheaper form of treatment is now being tried with a view to lowering cost of treatment.

Tobacco

598. *Heliothis armigera* Hb and *Gnorimoschema* were widespread in tobacco fields at Belle Isle, Ste. Marie. Spraying using Bidrin gave excellent results.

Potato

599. The Lepidopterous pests *Gnorimoschema operculella* Zell., *Plusia orichalcea* F. and *Prodenia litura* F. caused considerable damage to potato plantations. In some localities defoliation was more than 60 per cent.

600. Orthodibrom or Phosdrin controlled effectively the first two pests.

601. *Prodenia litura* which were cutting young potato plants at soil level were kept under control by Telodrin.

602. The tuber-moth *Gnominoschema operculella* can be successfully controlled in the field by applying three methods in conjunction:

- (i) by fairly deep planting of tubers;
- (ii) by earthing up (ridging) the rows once or twice; and during the season;
- (iii) by spraying with DDT, Phosdrin or Orthodibrom.

603. Chemical treatment should start as soon as the first signs of damage to the foliage appear. Thereafter spray every 7 or 10 days until infestation disappears completely.

604. Damage of tea was slight over the year. Isolated attacks of tender leaves by the phytophagous mites *Hemitarsonemus latus* Banks and *Brevipalpus phoenicis* Geyskes were reported at Chamarel; however the pests were successfully controlled by Phosdrin.

Miscellaneous Pests

(i) Tuber moth larvae were noticed in stored onion seeds at Alma Sugar Estate. Complete control was obtained by Phosdrin and DDT.

(ii) *Cratopus punctum* was found to feed on leaves of *Hibiscus* spp, *Rosa* spp's, *Vitis* spp. Lead arsenate was sprayed as a measure of control.

(iii) *Tetranychus* spp. misnamed as Red spiders were common on Tomato leaves, egg plant leaves, causing a yellow and sickly appearance of leaves. Rogor applications gave satisfactory results.

(iv) Stable flies were very abundant especially in the South of the Island due to high humidity prevailing in these areas. Nuvan 100 E.C. sprayed on hard surfaces reduced their numbers.

Pesticides

605. Amongst the new pesticides tested during the year the following have been recommended for use.

606. Nuvan and Nogos both containing DDVP have been found respectively useful against domestic pests and agricultural pests.

607. Nuvan is being tried in thermofogging for the control of pests of stores. Application rate of 0.5 per cent active ingredient per 100m³ appear effective.

608. Bidrin (carbicion) seems to be the best insecticide for Citrus pests. Galecron and Thiocron are undergoing tests.

Galecron seems to have good ovicidal properties.

Acres—a miticide is also undergoing test.

609. Azodrin was found to be excellent against army worms, *Lucania* sp., and cutworms, *Prodenia litura*, *Agrotis ipsilon*.

610. Temik and Disyston both used as granular insecticides are being experimented.

XX. Agricultural Chemistry

FEEDSTUFFS

611. The raw materials received at the Livestock Feed Factory for the preparation of animal feeds were checked on reception at the factory. The prepared feeds were also analysed. Maize samples from local production were received several times a week. A total of 160 maize samples were checked for the year.

FODDER

612. Very few samples were taken. Among the varieties checked, 4 new ones are worthy of notice:

		Dry Matter per cent	Protein per cent D.M.
Lucerne African	...	17.1	23.6
Centrosema	...	18.5	21.4
Glycine Javanica	...	18.1	19.5
Molopo Buffel Grass	...	19.8	7.8

WATER

613. Underground water from different places of the island was analysed for their suitability for irrigation purposes. There was a marked increase over the preceding years, in the number of samples received.

SOIL

614. Numerous soil samples were checked for their mechanical as well as their chemical constituents. Most of them were received from Wooton Tea Station for the control of PH.

615. Soil samples for Yemen (Rice project) and Curepipe Experiment Station were analysed for their content in available silica:

Yemen

PH	...	...	...	...	...	6.6	7.3	8.4	70
Silica (Si.) Kg./arp./ft. soil	...	...	...	...	...	60	71	75	60

Curepipe

PH	...	...	...	5.2	5.3	5.2	5.3	4.5	5.1	5.0	5.2
Silica (Si.) Kg./arp./ft. soil	...	...	...	23	27.6	20	23	16	27.5	34	40.5

616. The above figures represent the pH and Silica contents of samples taken from one field at Yemen and one at Curepipe. For sugar cane, the recommended level of available silica in the soil is 25 kg/arp./ft. soil. For other grammineae the optimum has not been established. Taking the accepted figure for sugar cane as basis of comparison, the soil of Curepipe seems to be just about the correct level in silica; in a place like Yemen the higher level of silica in the soil would be normal for the type of soil encountered there.

ROCKS

617. In connection with the underground research programme samples of rock from borings carried out in different places were received for analysis from the Hydrologist of the Ministry of Works. The following elements were determined: Lead (Pb), Copper (Cu), Manganese (Mn), Chromium (Cr.),

Titanium (Ti). The methods followed included chromatographic separation and spectrophotometric determination:

Sample No.	Pb %	Cu %	Mn %	Cr %	Ti %
1 ...	0.018	.023	.16	1.06	1.96
2 ...	.076	.016	.09	.03	2.10
3 ...	.059	.021	.18	Nil	2.50
4 ...	.107	.024	.24	.15	1.72
5 ...	.119	.034	.20	.37	2.12
6 ...	.405	.033	.16	Nil	Nil

GROUNDNUTS

618. Different varieties of groundnuts were checked for their oil content in order to help in the correct selection for local oil production. The oil content of kernels in good varieties was found to range from 40 to 46 per cent.

SOAP

619. The soap from local production (National) was analysed and compared with the imported Crescent Pak (Camel) grade. The National grade was found to be drier but with a higher content of chlorides, insoluble foreign matter and alkalinity. Was also checked for export quality the glycerine obtained from the manufacture of soap. The glycerine was found to be of good quality, but with a low glycerol content (78.2 per cent) and high water content (11.7 per cent), indicating insufficient concentration of the produce. Normal levels of glycerol and water are 80-86 per cent and 5-7 per cent respectively.

GINGER

620. Several tests were carried out on the drying of ginger under artificial conditions. Samples were dried in a non-ventilated oven for 6 days at 55-60°C. The moisture content was found to be in the range of 70-73 per cent. Such a low temperature had to be observed in order to preserve the quality of the ginger with respect to its flavour.

MISCELLANEOUS

621. Dipping solutions were tested for their strength. A marked increased over the preceding years was noted in the number of samples analysed. Various fertilizers were analysed, several of which being samples taken from adulterated stuff sold on the local market.

XXI. Engineering Division

CENTRAL WORKSHOP

622. The servicing, repair and maintenance of all departmental vehicles, tractors and machinery were carried out at the Central Workshop. Complete service records were kept.

The following servicings and repairs were carried out:

Vehicles	...	...	...	395
Tractors	...	...	...	114
Other Agricultural machinery	...	...	...	78
TOTAL				587

623. The following equipment and accessories were designed, assembled, fabricated, installed or reconditioned:

- (a) Six gates were made and two were repaired for the division of Veterinary Services and the Arbitration and Control Board.
- (b) Three trays for incubator were manufactured. One incubator and a plucking machine were repaired and overhauled.
- (c) Two chimneys, two hooks, six ventilators, four flanges and two grills were made for the Extension to the Livestock Feed Factory. One grain dryer was assembled. The assembly of a second grain dryer was started.
- (d) Grills and iron baskets for crabs and fish were made for the Fisheries Division.
- (e) Four galvanised tanks were made for F.A.O. Dark room.
- (f) A lathe was set up at the Central Workshop.
- (g) One Stand for a grinding wheel was made for the Workshop of the Tea Division.
- (h) Two trailers for Land Rover were assembled.
- (i) A peanut picker was completely overhauled and tested.
- (j) Six canopies were sewn for the various vehicles of the Department. Six tarpaulins were sewn and shipped to Rodrigues.
- (k) Two vehicles damaged in road accidents were overhauled.
- (l) Five wooden bodies were made for three old and two new lorries. One metal body was made for a new lorry.
- (m) One water wheel was fabricated for the Fisheries Division.
- (n) Slotted angle shelves for the Finance Division.
- (o) Angle iron purlins and trusses for garage and workshop, Tea Division.
- (p) 262 minor items.

624. The following items of woodwork were also made:

- 10 Cupboards
- 25 Chairs
- 8 Stools
- 14 Tables
- 4 Light Tables
- 5 Light Boxes
- 75 Crab Boxes
- 1 Surveyor's Staff
- 1 Receiving Bin for grains
- 1 Set Physical Culture equipment for Rodrigues Farm School
- 100 Marker Frames for Aerial Survey
- 25 Minor items.

BUILDINGS

The following buildings were completed and handed over:

- (1) Insecticide Store
- (2) Garage for Central Board
- (3) Fisheries Headquarters
- (4) Library
- (5) Extension, Livestock Feed Factory (Grain Drying Section).

625. The following works were also carried out:

- (1) Fencing off Fumigation Room at Fort George.
- (2) Building of Chute for Tuberculin Testing at Animal Quarantine Station, Roche Bois.
- (3) Modification of drive from Animal Quarantine Station to Slaughter house at Roche Bois.
- (4) Wooden shutters for Milk Collecting Centres.
- (5) Repairs to three doors of Milk Collecting Centres.
- (6) Dismantling of shed at Forest Department, Port Louis.
- (7) Fencing of former carriage shed at Port Louis.
- (8) Erection of flagmasts and masts for aerials at Reduit.

Work was started on the following buildings:

- (1) Extension of Central Workshop.
- (2) Insectarium.

626. The Division designed and supervised the construction of the following:

- (1) Tobacco Board Warehouse and Fumigation Room at Plaine Lauzun.
- (2) Garage and Workshop for Tea Division at Wooton.
- (3) Community Centre at Dubreuil.

627. One Agricultural Engineer was delegated by the Director to look after the building of the Extension of the Potato Store at the Agricultural Marketing Board, Moka.

628. The second Agricultural Engineer went to Rodrigues for two months to supervise the building of an Onion Store at Port Mathurin and to investigate into the possibilities of irrigation in various valley bottoms.

FARM IRRIGATION SERVICE

629. The Division in co-operation with the Hydrology Section, Ministry of Works, answered requests for investigations into the feasibility of sinking wells for irrigation in five areas in Pamplemousses District.

LIVESTOCK FEED FACTORY

630. 4,393 tons of different mixtures were manufactured during the year from such products as: wheat bran, maize flour, groundnut cake, cotton seed cakes, pollard, meat meal, fish meal, oats, lucerne meal, bone meal, cod liver oil, skimmed milk powder, molasses, bagasse, wheaten flour, rice flour, broad beans flour, scums, trelcovite, trelco brand nitrofurazone, trelco brand nitrofurans, Amprolmix VK, Aurofac 20, Adtramin, glucose, yeast powder, chick mix, breed mix, ground sand and salt.

631. Sixteen different kinds of foodstuffs are now offered for sale, namely: chick feed, poultry feed, cow feed loose, cow feed cubed, bull feed, calf feed, new cattle feed, pig grower feed, pig starter feed, creep feed, horse feed, special horse feed, scums molasses feed, breeders feed, calf milk substitute and chick mix.

632. From the above mentioned mixtures, 4,390 tons were sold at Livestock Feed Factory and Extension Shop, Rose Hill during the year.

XXII. Fisheries

633. The duties of the Branch are to enforce the provisions of the law regulating fisheries in territorial waters and to study, recommend and implement such new measures as may be necessary for the better protection of fish. It also collects statistical data, takes all steps necessary to improve the efficiency of the industry and the welfare of the fishing community.

634. In the absence of the Fisheries Officer on study leave in Canada, the Fisheries Division was managed by Chief Inspector J. Momplé until he retired on 13th April, 1967, then by Acting Chief Inspector E. Cabon until the return of the Fisheries Officer on 31st October, 1967.

635. A number of new vacancies were created by the retirement of Chief Inspector Momplé, Inspector Gueho, one head guard and one guard, the establishment therefore being six men short. Because of this, it was found impossible to continue the work of the flying squads which were disbanded until the return of the Fisheries Officer. This appears to have resulted in a general increase in the amount of fraud on the coast, fewer contraventions being established.

DETECTION OF FRAUD

<i>Year</i>	<i>Cases Prosecuted</i>	<i>Convictions</i>	<i>Total Contra- ventions</i>	<i>Illegal Nets</i>	<i>Explosives</i>	<i>Total of Fines</i>
						Rs.
1963	213	199	279	84	22	6,657
1964	144	230	185	76	19	5,915
1965	89	112	140	36	9	3,911
1966	270	306	305	98	31	8,037
1967	171	197	218	72	16	5,075

NEW EQUIPMENT

636. (a) A prototype 26 ft. pinnacle for Rodrigues Fishermen named "Solitaire" designed by J. M. Miller & Sons of Aberdeen was built by Messrs Taylor Smith and launched on 20th June, 1967. After an initial period of training in seamanship of the crew by the Marine Services, further training in fishing methods was given by members of the Fisheries personnel.

(b) A second boat was then built by the same firm, also to plans of J. M. Miller & Sons. This boat, launched on 8th November, 1967 was named "Explorer". It is 36 ft. long and is designed for offshore work around Mauritius and its dependencies. Initial work in 1967 including a survey of a new bank 13 miles North of Round Island, but was hampered by malfunctioning of the Echo sounder.

(c) The keel of the 85 ft. research vessel "Investigation" was laid and plating was 20 per cent completed by the end of the year. This boat is due for launching at the end of February 1968, and should be completed by August of that year.

(d) A new 20 ft. patrol boat was built for Trou d'Eau Douce Fisheries Post.

NEW FISHERIES HEADQUARTERS

637. The new Headquarters of the Fisheries Division at Reduit was completed and the personnel moved in on 25th October, 1967.

CONSTRUCTION OF FISH SHEDS

638. Three fish sheds were built by the Department at Baie du Cap, Le Morne and Poudre d'Or, and handed over to the Fisheries Division.

CONTROL OF FISH LANDING

639. The catch was controlled throughout the year at only four of the major landing stations, and for six months at a fifth. Complete catch figures are not therefore available, but comparison of the catch with that at the same stations for the previous four years shows a drop of 25 per cent from the average. It seems likely that this figure reflects a general drop in catch throughout the island and further confirmation of a disastrous rate of over-fishing, although severe weather conditions throughout the year may have been a contributory factor. Remedial action is shortly to be taken in the form of a revised schedule of sizes preventing the capture of fish below certain limits, together with a general increase in the mesh size of nets and basket traps. A reduction in the number of large net permits is also strongly recommended, together with the substitution of gill nets for large nets where possible. A reduction in the number of occasions in which the reserves were fished by nets to two, one occasion being for mackerels only, is an improvement on the situation in previous years.

CONTROL CATCH PER QUARTER IN METRIC TONS

			Average 1963-67				
			1963	1964	1965	1966	1967
1st Quarter	...	...	372.1	296.0	284.0	240.0	105.7
2nd Quarter	...	...	436.6	348.0	299.0	346.0	88.0
3rd Quarter	...	...	322.2	204.0	214.0	227.0	67.0
4th Quarter	...	...	344.0	297.0	322.0	316.0	113.4
			1,474.9	1,145.0	1,119.0	1,129.0	374.1

Catch Landed by Net Fisheries in 1967

Year	Catch (metric tons)	% of Total Controlled Catch
1963	396	26.8
1964	327	28.5
1965	300	26.8
1966	282	24.9
1967	134	*35.8

The contribution to the catch by the various modes of fishing was as follows:

		Catch in Tons				
		1963	1964	1965	1966	1967 tons
Nets	...	396	327	301	282	134.124
Basket traps	...	567	394	403	403	93.152
Lines	...	230	223	196	243	72.975
Octopii	...	237	172	196	185	68.916
Lobsters	...	25	19	18	12	4.121
Harpoon fish	...	19	10	5	4	.816
TOTAL	...	1,474	1,145	1,119	1,129	374.104

TYPES OF FISH CAUGHT

The distribution of fish species in Kgs. was as follows:

	1967 KGS.	Kgs.
Capitaine (<i>Lethrinus nebulosus</i>)	...	9,876
Dame Berri (<i>Lethrinus mahesa</i>)	...	13,994
Battardet (<i>Lethrinus harak</i>)	...	7,147
Caya (<i>Lethrinus reticulatus</i>)	...	8,152
Cordoniers (<i>Siganus spp.</i>)	...	68,803
Rouget (<i>Mullus</i>)	...	12,258
Mullets (<i>Mugiloidae</i>)	...	11,099
Vieilles (<i>Senanidae</i>)	...	16,924
Licornes (<i>Naso spp.</i>)	...	40,503
Octopii	...	68,916
Lobster (<i>Panulirus spp.</i>)	...	4,121
Other species of fish	...	112,311
TOTAL	...	374,104

* This figure is artificially inflated as a number of landing stations having no large nets were not controlled. The catch of these landing stations would normally have lowered the percentage as calculated.

640. A programme of research in salt water and fresh water farming was continued with promising results. Although it is not expected that the produce of fish farms will at any time satisfy the local market, the growing of luxury products such as oysters and crabs may provide a valuable export market. The Association of Young Farmers' Clubs is being advised and encouraged in this field.

641. The two Mauritian Companies engaged in fishing on the Banks North of Mauritius had a prosperous year and have talked of expansion both in the volume of fresh frozen fish, and into other fields of production such as salted fish and crayfish. It is not possible to overemphasize the importance for Mauritius of developing these industries.

XXIII. Rodrigues

GENERAL

642. A fairly favourable first season was followed by a very dry minor season as the following rainfall figures show:

		<i>Inches of rain—Meteorological Station, Rodrigues</i>							
<i>Month</i>		1960	1961	1962	1963	1964	1965	1966	1967
August	...	2.64	2.27	1.15	1.61	2.78	3.49	3.09	1.93
September	...	3.08	1.49	1.13	1.24	2.97	0.79	0.79	0.97
October	...	1.15	0.48	4.44	1.92	1.54	2.34	1.84	1.67
November	...	0.73	2.20	0.68	0.92	0.43	0.91	2.71	0.23
TOTAL	...	7.60	6.44	7.40	5.69	7.72	7.53	8.43	4.80

643. The 1967 conditions for crop growth during the second season were the worst for over ten years. Food crop yields were down and by November a famine period started and intensified during December. As from the first week in December good planting rains fell and admirable progress had been made up to the 23rd of December when intense tropical cyclone 'CARMEN' hit the island. 'CARMEN' passed the island very slowly and, as a result, wind speeds were around the 100 miles per hour mark for the unusually long period of six to eight hours. The cyclones' slow movement away from the island also brought about four days of rain and no drying sunshine; with the result that farm livestock which had been badly knocked about by the cyclone suffered four days in agonies. Losses of livestock which were inadequately housed was therefore large. The official figures were:

Cattle	...	...	611 (this included many old cows which should have been culled)
Goats	...	...	1,505
Sheep	...	...	738
Poultry	...	...	10,417
Pigs	...	...	437

644. The newly planted maize crops, the manioc crop, the fruit trees and windbreaks were all severely damaged along with peasant huts and houses. The windbreaks did much to protect soil and houses etc., but will take some time to recover and many must be replanted. The crop which stood up best to the cyclone and, in fact, profited by it, was the pasture lands.

645. Climatically the latter half of 1967 was disastrous to the Island's crops and Livestock.

646. In order to plan relief work to alleviate hardship to families during the famine in the last quarter of 1967, a survey was made to show approximate population density in defined areas along with the numbers and types of farms in each area. These findings are worth including here:

<i>District</i>	<i>Approximate population</i>	<i>Approximate No. of fa- milies</i>	<i>Lowland Farms</i>	<i>Unit Farms</i>	<i>Vegetable plots</i>	<i>Other Leases</i>
1. Oyster Bay and neighbourhood ...	2,050	412	29	45	145	275
2. Port Mathurin across to Pointe Tortue to Tamarin ...	5,400	1,080	165	265	13	330
3. Lataniers, Port Sud Est, Graviere and Grande Montagne ...	3,010	602	137	298	157	91
4. From Riviere Cocos, Marechal to Petite Butte ...	2,700	540	320	60	80	46
5. Baie Malgache, Limon and Baie du Nord ...	1,300	260	58	139	91	173
6. La Ferme, Corail to Petite Butte ...	1,620	324	236	74	10	187
7. Papayes, Mangues and Citron ...	1,100	202	2	250	52	45
8. Terre Rouge, Nasola and Roche Bon Dieu ...	2,600	520	41	248	182	372
TOTAL ...	19,780	3,940	988	1,379	730	1,519

N.B.—

Lowland Farm : Is a new land in good fertility.

Unit Farm : A farm developed by canalising and terracing eroded slopes and undergoing rehabilitation and therefore not of good fertility but improving.

Vegetable Plot : Very fertile alluvial flats leased in $\frac{1}{8}$ acre lots and one acre intensively managed—can support a family.

Other Leases : Mainly on eroded slopes in poor fertility but about one quarter in good heart.

The total number of lease farms was therefore:

$$988 + 1,379 + \frac{730}{8} + 1,519 = 3,976$$

647. All the 3,940 families are not farmers, some families lease two or three farms; it is true to say however, that any Rodriguan family who wants lands has got it. The few exceptions being those who are reluctant to move to a farming area from a heavily populated area.

648. Now of the 3,976 farms, 1,200 are therefore capable of producing a reasonable crop in the second season. The remaining 2,776 farms tend to poor fertility, but are being rehabilitated under the Development Programme, yet cannot be relied upon to produce a good second season crop without exceptionally good rains during the last quarter of any year. They do produce a reasonable main crop in March and April provided planting rains fall in December and January. The perennial problem, therefore, to about 2,400 Rodriguan families is the period from November to March, the famine period, and its severity depends on the rainfall from August onwards.

The approximate value of the total exports was:

	Rs
288 cattle at Rs 250 per head ...	72,000
5,141 pigs at Rs 90 per head ...	462,690
4,230 sheep and goats at Rs 40 per head ...	169,200
1,302 crates fowls at Rs 174 per crate ...	226,548
650 tons onions at Rs 500 per ton ...	325,000
20 tons Garlic at Rs 1,000 ...	20,000
10 tons Acacia at Rs 460 per ton ...	4,600
4,590 bales Salt fish and Octopus at Rs 140 per bale	642,600
TOTAL ...	1,922,638

653. The following table compares the total exports as from 1960:

	1960	1961	1962	1963	1964	1965	1966	1967
Cattle ...	615	720	1,076	579	616	631	402	288
Sheep & Goat	6,133	5,654	5,963	5,745	5,056	4,324	4,649	4,230
Poultry crates	728	650	636	706	550	861	1,379	1,302
Pigs ...	2,908	2,258	2,858	3,542	4,656	4,516	4,428	5,141
Onions—								
Garlic (tons)	258	150	51½	286	518	466	755	670
Acacia (tons)	235	75	38	130	81	79	14	10
Salt Fish & Octopus (bales)	4,187	3,540	4,370	4,105	4,287	3,847	3,873	4,591
VALUE ...	1,497,570	1,247,480	1,315,820	1,538,314	1,720,775	1,692,734	1,830,458	1,922,638

The value of the exports for each year has been calculated on the current 1966 prices.

654. Record exports of fish and pigs compensated for the fall in onion production due to the drought at the end of 1967. It is encouraging to note that the total value of exports continued to increase.

655. The Rodrigues Agricultural Production and Marketing Co-operative Society was appointed Buying Agents for the Mauritius Agricultural Marketing Board and bought the island's production of onions, garlic and limes.

DEVELOPMENT

656. Work progressed satisfactorily along the lines described in detail in the 1966 Annual Report. Terracing and Paddocking was done on about 350 holdings during the year. Two storage tanks and two dams were completed and work started on one storage tank and one dam. A total of 63,040 feet of galvanised water pipe and 235 water taps were installed bringing the totals to 424,894 ft pipe laid and 1,465 water taps installed. The development of two new breeding centres one at Trefles and the other at Batatran were well advanced at the close of the year. About hundred acres of steep slopes and windbreaks were planted up. Due to freezing of votes because of economic reasons no replacements were received for tractor and jeep transport. The position in this respect is very serious and a solution to the transport problem is essential if supervision and progress of the development plan are to be maintained.

657. The completion of buildings at the Agricultural Training Farm should occur in March 1968.

ANIMAL STATISTICS

Cattle

Station		Cattle				Total	
		Adults		Young			
		Male	Female	Male	Female		
Oyster Bay	...	...	1	30	8	12	51
Malabar	...	...	1	68	1	18	88
Le Chou	...	...	4	64	10	6	84
St. Gabriel	...	...	2	58	19	10	88
Marechal	...	...	1	57	18	20	96
Baie Topaze	...	...	1	38	1	1	41
Demonstration plots		...	11	14	4	94	123
TOTAL		...	20	329	61	161	571

658. Out of 207 calvings 109 male and 98 female calves were born. Sales to farmers were 33 cows and 80 bullocks.

Pigs

Station		Pigs				Total	
		Adults		Young			
		Male	Female	Male	Female		
Oyster Bay	...	...	4	12	26	26	68
Le Chou	...	...	1	15	20	13	49
St. Gabriel	...	...	4	17	13	8	42
Marechal	...	...	5	22	22	17	66
Baie Topaze	...	...	1	13	16	17	47
Demonstration plots	...		6	27	13	25	71
TOTAL			21	106	110	106	343

659. There were 119 farrowings producing 846 piglets or 7.1 per litter with an 86 per cent survival to weaning. The number of piglets sold to farmers was 771.

Sheep

Station	Sheep				Total
	Adult		Young		
	Male	Female	Male	Female	
Gombrani ...	2	24	5	5	36
Ile aux Crâbes ...	3	22	27	14	66
TOTAL	5	46	32	19	102

73 lambs were born and 24 rams, and 19 ewe lambs were sold to farmers as breeding stock.

XXIV. Lesser Dependencies

660. Three principal groups of islands were concerned, namely Peros of 2,900 arpents, Salomon of 2,000 arpents and Agalega of 3,000 arpents. The islands produce copra.

XXV. Land and Water Resources Survey

661. The Phase II of the Land and Water Resources Survey, which is a follow-up of the Phase I project, was approved by United Nations Development Programme. The Phase II project is to continue the investigations commenced under the phase I project, and to extend its scope to detailed feasibility study of specific development schemes identified in the Northern Plain and Western Coastal Region.

662. The Northern Plain Irrigation project is to provide water for irrigation to an area almost fully developed under agriculture. The work involved hydrological and engineering studies to ascertain most suitable water sources, volumes available, and the most efficient and economic distribution system. With the provision of an efficient irrigation system, the introduction of new methods and technology, the agricultural output of the region will be greatly increased. The success of such a scheme depends on technical, organizational and sociological factors. For this purpose a pilot scheme was proposed. Recommendations for legislation to control water use have also been proposed.

APPENDICES

A. Staff

(as at 31st December, 1967)

<i>Appointment</i>	<i>Name</i>	<i>Remarks</i>
Director of Agriculture ...	M. D. French-Mullen C.B.E., D.I.C.T.A., A.I.C.T.A.	On pre-retirement leave. Dr. A. Darné Acting.
Deputy Directors ...	S. Staub, A.R.C.S.T. (Glas.) A.M.I. Mech. E., Dip. Agric. (Maur.)	Retired 1st July 1967. Mr. B. D. Roy, Acting.
	A. Darné, F.R.C.V.S., Diploma Agric. (Maur.)	

ADMINISTRATIVE AND FINANCE DIVISIONS

Chief Finance Officer ...	G. Dhokit ...	Temporary
Chief Executive Officer	J. L. Mélotte ...	Acting

In addition there are:

3 Senior Executive Officers	
6 Executive Officers ...	4 vacancies
2 Higher Clerical Officers	
15 Clerical Officers ...	4 vacancies
1 Senior Stores Officer	
3 Stores Assistants	
2 Confidential Assistants	1 seconded for duty to the F.A.O.
10 Typist/Stenographers	2 vacancies
1 Librarian ...	

AGRICULTURAL AND EXTENSION DIVISIONS

Senior Agricultural Officers (3)	B. D. Roy, B.Sc. (Agric.) (Wales), Dip. Agric. (Maur.) K. Lutchmeenaraidoo, B.Sc. (Agric.) (Reading) Dip. Agric. (Maur.) 1 vacancy	Acting as Deputy Director.
Agronomists (4)	... M.A.L. Suzor Dip. Agric. (Maur.) T. Narain, B.Sc. Agric. (Reading) L. R. Brunet, B.Sc. Agric. (Reading) 1 vacancy	Retired 5th Oct., 1967
Horticulturist (1)	... A. M. Osman, B.Sc. Agric. (Reading) Postgraduate D.T.A.	
Agricultural Officers (9)	J. Marot ... I. Fakim Dip. Agric. (Maur.) M. Sooltangos Dip. Agric. (Maur.) H. Choolun Dip. Agric. (Maur.) S. Bagwant D. Reetoo B. Nundloll S. Y. E. Doomun 1 vacancy	Retired 8th March, 1967
In addition there are:		
	17 Assistant Agricultural Officers	7 vacancies
	16 Overseers ...	3 vacancies
	8 Agricultural Assistants	5 vacancies
	6 Agricultural Cadets ...	3 vacancies

AGRICULTURAL CHEMISTRY DIVISION

Chemist ...	... S. Belcourt B.Sc. (Wales) Dip. Agric. (Maur.)	
Assistant Chemist ...	J. Pablot, B.Sc. (London)	1 vacancy

In addition there are:

3 Scientific Assistants ...	(2 vacancies) the third one is on study leave
2 Agricultural Cadets	

PLANT PATHOLOGY DIVISION

Plant Pathologist ... L. Orieux, B.Sc. (London)
D.I.C.

Assistant Plant Pathologist S. Félix, Diploma Agric.
(Maur.)

In addition there are:

4 Quarantine Inspectors

2 Scientific Assistants ... 1 on study leave +
1 vacancy

1 Agricultural Cadet

ARBITRATION AND CONTROL BOARD DIVISION

Registrar ... P. J. Galéa, Dip. Agric.
(Maur.)

Assistant Registrar and Chief Chemist A. A. Aumeerally, B.S.
(Sug. E.), B.S. (Chem. E.), A.I. Chem. E.,
Dip. Agric. (Maur.)

Accountant ... P. G. Gnany, A.A.C.C.A.

Senior Assistant Chemist I. D. Nawoor, B.Sc.
(Honours) Chemistry
(Wales)

Assistant Chemist ... R. Thélémaque, Dip.
Agric. (Maur.)

In addition there are:

2 Investigational and
Weighbridge Inspectors

3 Senior Test Chemists

25 Test Chemists

1 Test Chemist employed during
crop period only

25 Samplers

AGRICULTURAL COLLEGE DIVISION

Principal ... E. Lim Fat, M.Sc.,
M.S.A.E., A.M.I.
Agric. E., B.Sc.,
A.C.G.I., A.M.I.
Chem. E.

Lecturers (4)	... R. Latulipe, B.Sc. (Lond.) R. Burrenchobay, B.Sc. (Edin.) S. Moutia, D. Phil. (G.U.), Acting as Senior B.Sc. (Hort.), Dip. Agric. Agricultural Econ. (Oxon), F.R.H.S. Officer R. D. Beeraj, B.Sc. (Wales)
Assistant Lecturers and Laboratory Demons- trators (4)	P. Guérandel, Dip. Agric. (Maur.) F. G. Carver, Dip. Agric. On study leave (Maur.) S. Boojeehur, Dip. Agric. On study leave (Maur.) 1 vacancy

In addition there are 24 part-time Lecturers.

ENGINEERING DIVISION

Agricultural Engineers (2)	L. Li Pi Shan, B.Sc. (Sask.) A. R. Satar, B.Sc. (Israel)
Assistant Agricultural Engineer	M. Morad, Dip. Agric. (Maur.)

In addition there are:

1 Scientific Assistant	... Vacant
1 Supervisor Livestock Feed Factory	
1 Accounts Clerk	
1 Temporary Clerk, Exten- sion Shop	
1 Agricultural Cadet	

ENTOMOLOGY DIVISION

Entomologist	... J. E. A. Orian, Ph.D., Resigned with D.I.C., B.Sc., F.R.E.S., effect from 1st F.Z.S., Dip. Agric. October, 1967 (Maur.) A.C.R.
Assistant Entomologist	J. Monty, Dip. Agric. On study leave (Maur.) A. Joomaye, B.Sc. Appointed (Honours), Zoology temporarily and Botany

In addition there are:

2 Scientific Assistants	... Vacant
1 Agricultural Cadet	

VETERINARY DIVISION

Senior Veterinary Officer	J. U. D. Shuja, M.R.C.V.S.		
Veterinary Officers (2) ...	C. S. S. Cheung Chin Yan, B.V.M. & S(Edin.), M.R.C.V.S.		1 vacancy
Animal Husbandry Officer	J. A. C. Delaitre, B. Agr. (N.Z.), Animal Hus- bandry		
Laboratory Technologist	F. Nadeau		
Assistant Veterinary Officer	M. F. Mosaheb, B.Sc. (Vet.), B.Sc. (Animal Husbandry) (Punjab)		
Senior Stock Inspec- tors (2)	R. Pascal ...	...	1 vacancy
Agricultural Officers (2)	A. Ferrière C. Gassin ...	...	On study leave

In addition there are:

2 Scientific Assistants	...	Vacant
9 Stock Inspectors	...	2 vacancies
21 Livestock Assistants	...	3 vacancies
3 Agricultural Assistants		
2 Overseers		
2 Agricultural Cadets		

TEA DIVISION

Senior Agricultural Officer	D. N. Andrews		
Agronomists (2) ...	L. Moorlee, Dip. Agric. (Maur.)		1 vacancy
Agricultural Officers (4)	C. S. Amide, Dip. Agric. (Maur.)		3 vacancies

In addition there are:

9 Assistant Agricultural Officers		7 vacancies
15 Overseers		5 vacancies
2 Agricultural Assistants		
6 Agricultural Cadets		1 vacancy

FISHERIES DIVISION

Fisheries Officer	...	J. D. Ardill, B.Sc. (Zoology) St. Andrews	
Chief Inspector	...	M. A. E. Cabon	

In addition there are:

3 Inspectors		
3 Sub-Inspectors		
16 Head Guards	...	1 vacancy
36 Guards	...	5 vacancies
1 Clerk and Storekeeper		Vacant

RODRIGUES DIVISION

Senior Agricultural Officer P. L. Hotchin, O.B.E.,
B.Sc. Agric. (Leeds),
D.T.A. (Trinidad)

Agricultural Officer ... Vacant

In addition there are:

2 Assistant Agricultural
Officers
16 Overseers
1 Executive Officer
1 Clerical Officer
1 Assistant Stores Officer
2 Stores Assistants
5 Clerical Assistants
4 Fisheries Guards Vacant

B. Composition of the Principal Boards and Committees

(i) BOARD OF AGRICULTURE, FISHERIES AND NATURAL RESOURCES

Ex-Officio Members

The Director of Agriculture—*Chairman*

The Conservator of Forests—*Vice-Chairman*

The Deputy Financial Secretary.

Members of the Legislative Assembly

The Honourable K. Gokulsing

The Honourable Y. Mohamed

The Honourable R. Rault

The Honourable M. Foogooa.

Representatives of Millers

Mr. Serge Dupont de Rivaltz de St. Antoine

Dr. P. O. Wiehe, C.B.E.

Representatives of Planters

Mr. Roland Ducler des Rauches

Mr. Nundlall Gunpath.

Representative of the Chamber of Agriculture

Mr. L. H. Garthwaite.

There was one meeting of the Board during the year.

(ii) AGRICULTURAL COLLEGE ADVISORY BOARD

The Director of Agriculture—*Chairman*

Nominated by His Excellency the Governor

The Honourable R. Balgobin, M.L.A.

Mrs. B. Jhowry

Dr. P. O. Wiehe, C.B.E.

Nominated by the Chamber of Agriculture

Sir André Nairac, Kt., C.B.E., Q.C.

Mr. Serge Dupont de Rivaltz de St. Antoine.

Nominated by the Société de Technologie Agricole et Sucrière

Mr. Robert Antoine

Mr. Auguste Harel.

Nominated by the Association of Former Agricultural Students

Mr. Rene Noel.

The Board held 4 meetings during the year.

A meeting of the Joint Board of Appeal was held on 14.9.67.

(iii) ARBITRATION AND CONTROL BOARD

Mr. Magistrate S. Mootoosamy—*Chairman*

Representatives of Millers

Mr. H. Koenig

Mr. Philippe d'Arifat.

Representatives of Large Planters

Mr. Roland Ducler des Rauches

Mr. Baalkrishna Ramphul.

Representatives of Small Planters

Mr. Nunkeesor Saddul

Mr. Jagdeosing Chundunsing.

The Board held 25 meetings during the year.

(iv) TOBACCO BOARD

Ex-Officio Members

The Director of Agriculture or any officer of his

Department deputed by him—*Chairman*

The Commissioner of Excise—*Vice-Chairman*

The Accountant General or any officer of his Department deputed by him

The Manager, Tobacco Warehouse.

Appointed by His Excellency the Governor on the advice of the Minister

The General Manager of the British American Tobacco Co. (Mauritius) Ltd., or his representative

The Managing Director of the Amalgamated Tobacco Corporation (Mauritius) Ltd., or his representative

Mr. A. G. Rey

Mr. Icbal Roy

Mr. R. Ducler des Rauches

Mr. A. Purgass

Mr. S. Butan

Mr. G. R. Sohawon.

The Board held 14 meetings during the year.

(v) LAND SETTLEMENT ADVISORY COMMITTEE

The Director of Agriculture or his representative—*Chairman*

The Senior Agricultural Officer (Extension)

The Registrar of Co-operative Societies

The Chairman, District Council (North)

The Chairman, District Council (South)

The Chairman, District Council (Moka—Fiacq)

The Honourable Vele Govinden, M.B.E., M.L.A.

Mr. R. Hurday

Mr. Hurruck Hoolsy.

The Committee did not hold any meeting during the year.

(vi) TEA CONTROL BOARD (UP TO SEPTEMBER 1967)

Ex-Officio Members

The Director of Agriculture—*Chairman*

The Deputy Financial Secretary

Members appointed by His Excellency the Governor

The Hon. V. Govinden, M.B.E.

The Hon. H. R. K. Aubdool

Mr. Philippe Boullé

Mr. A. H. Maderboccus

Mr. Francis North-Coombes

Mr. Jacques Pilot

Mr. Lutchmeeparsad Ramdin

Mr. B. Ramsahye

TEA CONTROL BOARD (FOR THE REST OF YEAR 1967)

*Ex-Officio Members*The Director of Agriculture—*Chairman*

The Deputy Financial Secretary.

Members appointed by the Minister

Mr. H. R. K. Aubdool

Mr. V. Govinden, M.B.E.

Mr. Jean Rey

Mr. A. H. Maderboccus

Mr. Francis North-Coombes

Mr. Jacques Pilot

Mr. Lutchmeeparsad Ramdin

Mr. B. Ramsahye.

The Board held 12 meetings during the year.

(vii) SUGAR PLANTERS' REHABILITATION FUND COMMITTEE

*Government Officers*The Director of Agriculture or his representative—*Chairman*

The Registrar of Co-operative Societies or his representative

Representative of the Mauritius Chamber of Agriculture

Mr. George Rouillard.

Representative of the Sugar Cane Planters' Association

Mr. C. Dwarkasingh.

Representative of the Mauritius Cane Growers' Association

Mr. Jacques Lagesse.

Representatives of the Mauritius Co-operative Agricultural Federation Ltd.

Mr. Jagdeo Roodurmun

Mr. Soomaroo Butan.

The Committee held 16 meetings during the year.

C. Legislation

Proclamation No. 3 of 1967

... To amend Proclamation No. 20 of 1966 re. Varieties of sugar cane which may be planted and propagated on the Colony and to fix the time within which any such variety of sugarcane shall be uprooted.

Proclamation No. 5 of 1967

... To proclaim the rate of duty leviable under the Sale of Canes (Control) Ordinance, 1964 on the Sugars of the 1966 Crop exported from Mauritius.

- Proclamation No. 9 of 1967 ... To provide for the protection of wild birds.
- Proclamation No. 23 of 1967 ... To authorize the use of large nets and canard nets for fishing during the period extending from 1st October, 1967 to 28th February, 1968.
- Ordinance No. 12 of 1967 ... The Sale of Canes (Control) (Amendment) Ordinance, 1967—To amend the Sale of Canes (Control) Ordinance, 1964.
- Ordinance No. 16 of 1967 ... The Mauritius Agricultural Marketing (Amendment) Ordinance, 1967—To amend the Mauritius Agricultural Marketing Ordinance, 1963.
- Ordinance No. 19 of 1967 ... The Ministry of Agriculture and Natural Resources (Integration) (Amendment) Ordinance, 1967—To amend the Ministry of Agriculture and Natural Resources (Integration) Ordinance, 1963.
- Ordinance No. 22 of 1967 ... The Revenue (Five Per Cent Surcharge) Ordinance, 1967.
- Government Notice No. 8 of 1967 ... Civil Establishment (General) Amendment No. 65) Order, 1966.
- Government Notice No. 15 of 1967 ... The Mauritius Agricultural Marketing (Cess) (Amendment) Regulation 1967.
- Government Notice No. 37 of 1967 ... The Mauritius Agricultural Marketing (Prices) Order, 1967.
- Government Notice No. 48 of 1967 ... Amendments to list of officers declared pensionable under the Pensions Ordinance, 1951 (Government Notice No. 38 of 1953, as subsequently amended).
- Government Notice No. 52 of 1967 ... Civil Establishment (General) Amendment No. 66) Order 1967.
- Government Notice No. 68 of 1967 ... The Mauritius Agricultural Marketing (Prices) (Amendment) Order, 1967.
- Government Notice No. 88 of 1967 ... The Mauritius Agricultural Marketing (Cess) (Amendment No. 2) Regulations, 1967.

D. List of Publications and Contributions to Literature by Officers of the Department of Agriculture during 1967

<i>Name of Author</i>	<i>Title of Paper</i>	<i>Name Volume No., Page Nos. of periodical in which published</i>
Felix S. & Orieux, L. ...	Seed treatments for the control of plant diseases in Mauritius	Revue Agricole et Sucrière de l'Ile Maurice Vol. 46 No. 1, p. 12.
Galea, P. ...	The relationship between first expressed, primary and absolute juice.	Revue Agricole et Sucrière de l'Ile Maurice Vol. 46 No. 2 p. 88.
Lim Fat, E. ...	Retrospective of higher agricultural education in Mauritius	Revue Agricole et Sucrière de l'Ile Maurice Vol. 46 No. 1, p. 25
Lim Fat, E. ...	Industrialisation in Singapore	Revue Agricole et Sucrière de l'Ile Maurice Vol. 46 No. 4, p. 39
Milliken, M. & Friedrich, K. H.	Some preliminary economic indicators of the feasibility of rice production in Mauritius	Revue Agricole et Sucrière de l'Ile Maurice Vol. 46 No. 4 p. 187.
Moutia, Dr. S.	Conferences sur les industries agricoles secondaires dans l'économie du pays	Revue Agricole et Sucrière de l'Ile Maurice Vol. 46 No. 2, p. 95,
Moutia, Dr. S.	Coffee in Mauritius	Revue Agricole et Sucrière de l'Ile Maurice Vol. 46 No. 4 p. 200.
Orieux, L. ...	Guide pour la lutte contre les maladies des plantes	Revue Agricole et Sucrière de l'Ile Maurice Vol. 46 No. 3, 119.
Underhill, H. W. & Venkatasawmy K.	Evaporation studies in Mauritius	Revue Agricole et Sucrière de l'Ile Maurice Vol. 46 No. 3, p. 138
Department of Agriculture	Annual Report	... 1965.

E. Richeieu Livestock Feed Factory

STATEMENT OF REVENUE AND EXPENDITURE FOR THE YEAR ENDED 30TH JUNE, 1967

EXPENDITURE		Rs	c	Rs	c
Stock of Materials on 1.7.1966 :					
Raw Materials	...	1,033,080.87	...	2,019,464.34	...
Manufactured Feeds	...	21,370.44	...	24.00	...
Aloe Bags	...	27,862.50	...	---	2,019,440.34
Purchase of Raw Materials --					
Maize	...	676,750.00	...	726,008.03	...
Wheat Bran	...	226,704.83	...	15,910.00	...
Pollard	...	177,203.60	...	23,308.75	...
Meat Meal	...	86,912.50	...	---	764,326.78
Fish Meal	...	160,308.75	...	---	306,381.21
Molasses	...	52,280.86	...	---	---
Groundnut Cakes	...	171,931.62	...	---	---
Cotton Seed Cakes	...	160,750.61	...	---	---
Salt	...	3,439.20	...	---	---
Breed and Chick Mix	...	7,431.95	...	---	---
Antibiotics and Minerals	...	2,163.57	...	---	---
Wheaten Flour	...	1,470.00	...	---	---
Rice (sweeping)	...	2,280.00	...	---	---
Milk Powder	...	906.00	...	---	---
Diesel Oil	...	20,608.00	...	---	---
Aloe Bags	...	83,100.00	...	---	---
Raw Materials received in 66-67 but paid in 67-68	...	1,834,242.49	...	---	---
Maize	...	14,996.76	...	---	---
Other Expenses					
Wages	...	113,124.68	...	---	---
Transport	...	1,332.54	...	---	---
Office Expenses	...	203.90	...	---	---
Electricity	...	12,269.37	...	---	---
Insurance	...	5,404.47	...	---	---
Maintenance of Machinery	...	22,096.29	...	---	---
Rent of Extension Shop	...	2,400.00	...	---	---
Miscellaneous	...	1,764.10	...	---	---
				138,595.35	---
				---	3,090,148.41

F. Conversion Table

1 Arpent	...	...	1.043 acres
1 Gaulette	...	...	10.61 feet
1 Metric Ton	...	...	1,000 Kilos
1 Long Ton	...	...	1,016 Kilos
1 Pound Avoirdupois	..	...	454 Grams
1 Kilo	...	...	1,000 Grams
1 Hundredweight	...	...	50.803 Kilos
1 Cord	...	...	92.82 Cubic feet
1 Imperial Gallon	...	...	4.54 Litres
1 Rupee	...	...	1/6 Sterling

